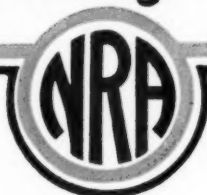


The AMERICAN RIFLEMAN

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NUMBER 19

MARCH 1, 1924

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C·L·A·S·S·I·C Caswell Trophy

WON BY

District of Columbia
Small Bore Team

1923

This magnificent trophy of the headless, armless and mysterious lady with wings known as the "Winged Victory" made its initial appearance at Camp Perry in September, 1923, having been presented by that big game hunter and sportsman, Colonel John Caswell, for annual Small Bore competition, the

prize being for the winner of the Short Range Team Match. In this competition the team consists of six shooting members and one team from each State and the District of Columbia is eligible. The shooting conditions are twenty shots at fifty and twenty shots at one hundred yards.

Time will give to this trophy a prominent place in the records of Small Bore rifle shooting and the day will come when there will be fierce competition for its possession by the teams from every State.

During the first contest at Camp Perry in September, 1923, several States, including the District of Columbia, were represented by teams. To the strong D. C. Team, however, fell the honor of inscribing its name on the trophy as the first winner. At this time it is altogether fitting and proper that we should mention Miss Katherine Edmonston whose contribution to the success of the Team was the excellent score of 391 out of a possible 400.

The consistently high and uniform shooting of the first three members of the team may be due in a measure to the fact that they all shot—



DISTRICT OF COLUMBIA SMALL BORE TEAM, 1923
WINNERS CASWELL TROPHY
Front Row: Col. C. E. Stodter, Team Capt.; Walter Stokes
Back Row: Miss Katharine Edmonston, Ollie Shriver, "Davy" Crockett,
Hal Leizear, R. H. McGarity



D. C.

OFFICIAL TEAM SCORE

	50 yds.		100 yds.		
McGarity	100	98	98	98 =	394 Palma
Stokes	99	96	97	100 =	392 Palma
Edmonston	97	98	97	99 =	391 Palma
Shriver	97	98	94	99 =	388
Crockett	100	92	94	96 =	382
Leizear	94	97	92	96 =	379
					2326
Ohio	-	-	-	-	2321
Pennsylvania	-	-	-	-	2315
California	-	-	-	-	2304
Illinois	-	-	-	-	2293



REMINGTON PALMA

The Premier .22 Long Rifle Cartridge



The AMERICAN RIFLEMAN

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WASHINGTON, D. C., MARCH 1, 1924

\$3.00 a Year. 20 Cents a Copy

Fifteen Years Forward and Back

By Charles Askins

AN odd phase of human existence is that a man cannot look backward with a clear view; neither can he look forward at all. To youth the man of fifty is a mystery; he is an old man, thinking in an unknown tongue, living past comprehension; to the man of fifty the youth of today is not the lad that he used to be. The limitations of the humankind are such that a man's sympathies and understanding do not extend forward or backward more than fifteen years. To the boy under twenty the man of forty is very old, old and mysterious and incomprehensible—a stumbling block in the path of modern progress. To the old man the boy is vain and boastful, strangely unwilling to learn the road from one who has just passed through the woods.

Being midway the hundred years that a man ought to live, perhaps I may be forgiven if I attempt to look both forward and back. I remember when about eighteen years old I knew a girl a year or two younger. She developed a strange liking for a man of thirty-five. It was in vain that I pointed out the gray in his hair, that he was becoming stout, that I could jump three feet higher than he could, that he had become a very old man. Sometimes the "old man" looked at me with a quizzical toleration, half contempt, and sometimes I brushed him aside as one would a dead stick which obstructed the path. To me an unknown life; a man who belonged elsewhere and was trying to beat back into the world—the world of youth.

But the girl married him, for maybe a woman can see forward and back farther than a man.

Only fifteen years forward or back, beyond is the unknown, the misunderstood, the unbelievable. Forward fifteen years is a wall beyond which we cannot see, and those who live beyond that wall we do not know. Backward we know what is beyond the wall, but those who live in that vivid land will have none of us. I am asking the man of fifty if this is not even so? Do you know your son; does he know you? Do you consult him as you would a full grown man; does he tell his secret thoughts to you?

It is so in business, it is so in professional life, it is so in religion, and it is so in war. Take a man of forty and put him in charge of a big business; for his lieutenants he will employ men between the ages of thirty and fifty—not much younger and not much older, for his wall is within ten years in either direction. Take a general of fifty, and he will ask that his

brigade commanders be not less than thirty-five, and he can see that men of sixty have wisdom and judgment. But let the general be under thirty and few men can serve under him who are over forty years old. To him the man of fifty is beyond the wall; he does not know him and he does not trust him; he is the "old man," living beyond his time, a dead stick. The fiery young preacher appeals to youth; the sweet and ripened philosophy of the old minister points the way to age.

The man of my own age will best understand what I am writing, the older man will understand it well, but the young man will neither understand nor pay attention. Yet it is to him that I would appeal. Widen the space between the walls; we are all human on either side. The youth may not know as much as he thinks he does, yet he knows exceedingly more than his son will give him credit for a generation hence, and time travels fast at the end of the race. Remember that the old man may not feel as old as he looks, that time marks only the surface, that he may have a boy's heart, for a man dies as he lives, with the one heart that nature gave him. Remember that over the wall which you have erected against him, he may be passing through a fair land, mellow with the fall sunshine as becomes autumn, yet travelers are few, and he walks mostly alone. The friends, chums, pals, whom he once met at every turn are not there—they have reached the end of the road. If he looks back at you, over that wall, wave him a friendly greeting, for you will be with him by and by, and time runs fast at the end of the road.

If there is a common meeting ground between youth and age, where the walls are never seen, it is in the field of sport. Once a shooting man, always a shooting man, never changing, never losing interest, never growing old. When other interests pall, when business is no longer followed, when true comrades are under the sod, the rifle still carries straight, the birds are still killed just as dead in the air, the green leaves still turn to gold, the frost still leaves the old-time winding trails of beasts and bird, the partridge still whirs on flashing wings, and the red deer whistles as keen as ever he did when the world was young. You who are young will find the old shooting man a good comrade, kindly, patient, full of the wisdom of marsh and stream, for between him and youth there is no wall, and no wall in front except at the end of the road.

Taming the Trigger Pull

By Stephen Trask

THE balance of choice between any two rifles of approximate bore excellence has always been, and will continue to be, that quality which, in shooting parlance, is described as "a snappy let-off."

Generations of riflemen have honed the creep from trigger sears. "Sweetening the pull" was what they called it. But in reality what the rifleman was seeking to accomplish was compensation, as far as possible, for the erratic behavior of a most unruly member—the trigger finger. While the shooter's eye and brain may be in absolute accord at the moment when the sights are correctly aligned, yet unless the trigger finger functions with split-second precision, the shot flies wild.

The interval when the trigger finger may play havoc with a perfect hold exists during that brief period between which pressure releases the firing pin and the striker impacts upon the primer, starting the bullet on its flight. This is known as "lock time." In turn, lock-time must be considered in two intervals: first, that period consumed by the operation of the trigger proper; and, second, that which is covered in the travel of the released firing pin.

To constrict the latitude in which the trigger finger can make a mistake and to shorten the period of bolt travel may be accepted as a means of discounting to an appreciable and practical extent the human error which creeps into a score. Wherefore recently a study of firing-pin and set-trigger time, which is the basis for this discussion, was made by the Ordnance Department at the Aberdeen Proving Ground in connection with "tuning up" the 1924 Match rifles.

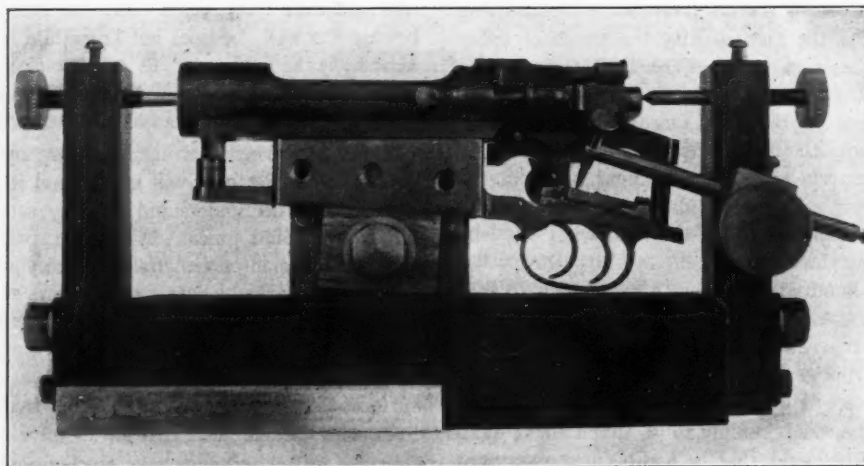
This inquiry, which resulted in the official report presented in connection with this discussion and which, by the way, led to conclusions not altogether coinciding with some of the hitherto prevalent ideas concerning the subject, took the form of a test in which there figured a form of chronograph known as an oscillograph camera, which was satisfactorily adapted to this problem.

The firing pin and set trigger test had its inception in the general program of developing Springfield Match rifles equal, if not superior

to the free-rifles of continental Europe against which they will again compete this summer in the Olympic and International Matches.

While the relative importance of special barrels and special ammunition for these Match weapons has been fully understood among the men who have had the production of these rifles in charge, there was one factor of potentially great importance about which was much of conjecture and little of definite knowledge. That factor was lock time.

The matter of the selection and assembly of the 1924 Match rifles is in the hands of the Team Captain, Major L. W. T. Waller, U. S. M. C. In making up the arms for the team pass, in accuracy and mechanical perfection,



The Marine Corps set trigger clamped in the special rest showing the contact points through which the oscillograph operates.

Major Waller selected special barrels, Springfield actions, special stocks and sights. Familiar with the characteristics of these, he found the matter relatively simple. Only in regard to the set triggers and firing pins to be used was there any question. For some time past many practical riflemen, several of them members of the International team squad, have been giving much thought to these matters, developing experimental combinations of set triggers and "speeded-up" firing pins. "Speeding-up" the firing pins took the form of manufacturing them from different materials, including duraluminum, and tooling away all surplus metal. In the end four types of set trigger and firing pins were available. But the best combination could be determined only by test. The work was then undertaken by the Ordnance Department at the Aberdeen Proving Ground and under the direction of Colonel W. H. Tschappat, Ordnance Department, R. H. Kent, Ordnance Engineer in charge of the Instrument Section, made the time records shown in the report.

A Study In Lock Time Based upon the Ordnance Department Test of Set Triggers and Firing Pins

From the report, which is unique in that it covers a practically untouched field and will for the basis for any future similar tests, these conclusions may be drawn:

The single trigger such as is provided on the "as issued" rifle, works faster than does the trigger of set-type, and the advantage of the set trigger lies in relieving the unreliable trigger finger of part of its task.

The all-aluminum alloy firing pin is slightly faster than any of the others tested, and uses in its travel approximately one-half the time consumed by the "as issued" firing pin.

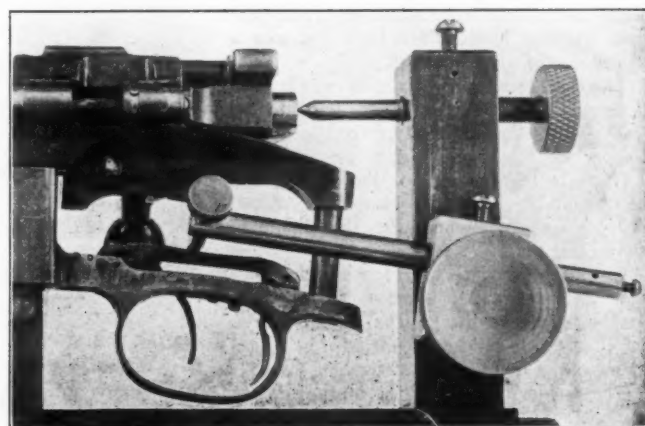
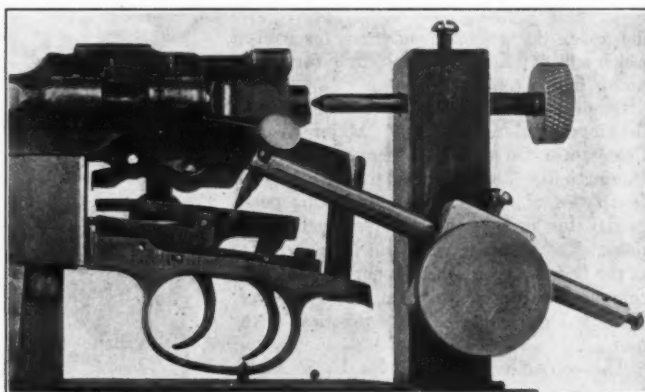
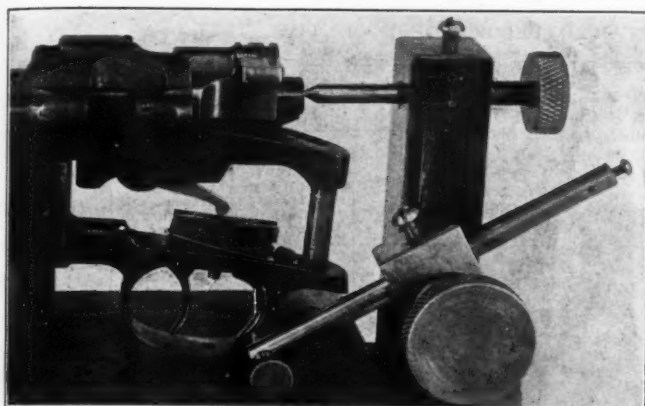
On these points, more will appear further on, but before setting forth the detailed results of the test, it may be well to consider the mechanism of quick release or "set" triggers and the reasons why they are used.

Practically contemporaneous with the rifle, the set trigger has been in use, in one form or another, for a great many years. Notwithstanding this, it is doubted that there is a thorough appreciation on

the part of riflemen as to the specific purpose served by such a mechanism or of the manner in which that purpose is accomplished.

If any trigger release or "set" trigger, adapted for use on a bolt action rifle, be examined, it will be found that there are two groups of parts, which may be called, first, the hair trigger or set trigger proper and second, the "kick off" group. In general, the first group resembles somewhat a regular trigger in miniature, with very carefully made and fitted parts, including a finger lever or trigger proper, a sear, and a sear spring. The second group may be a simple lever or some combination of levers together with an action spring.

The set trigger complete is set in the rifle action in such manner that the "kick off," on being released, will strike a smart blow on the sear which holds the firing pin in the cocked position, thus releasing the pin so that, actuated by the firing pin spring, it will move forward to deliver a blow on the primer of the cartridge.



Three types of set trigger that were tested at Aberdeen. Above: Left, set trigger of the German pattern used by the International team last year. Right, improved form of Iogerger (or Infantry Team) mechanism which sets with front trigger and fires with rear. Below: the original Iogerger design.

The sequence of events making up the complete series between the pressure on the finger release or trigger and the impact of the firing pin on the primer may be described as follows:

1st. The touch of the finger on the trigger to start the train.

2nd. Action in the set trigger proper, including from the release of the sear to the start of travel of the "kick off."

3rd. The time of travel of the "kick off" to the release of the firing pin sear, and

4th. The travel time of the firing pin from release to impact on primer.

It will be seen that these events include three separate and distinct intervals. The time of impact of the trigger finger of the rifleman is not considered by reason that this is a function of the time reaction of the individual firing the gun, and is not connected with the action of the mechanism, once this is started.

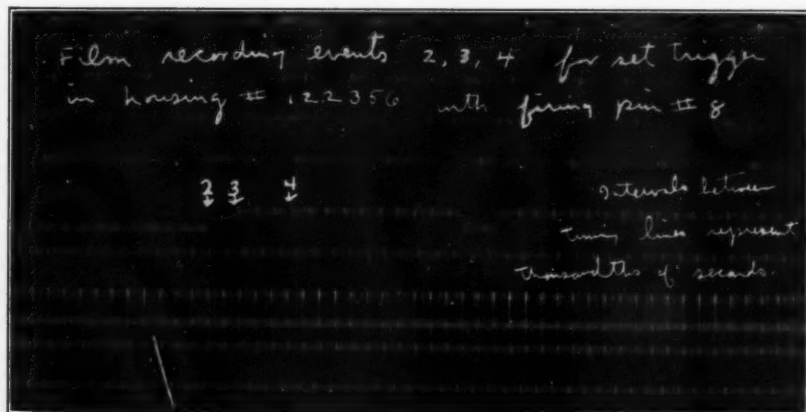
Leaving the consideration of the set trigger, if the single direct action trigger is examined it will be found to be the simplest means for releasing the firing pin in bolt action rifles which could be thought of, as for example,

depressed by direct action, and the firing pin is released at the instant the sear nose ceases to maintain contact with the sear notch. It will be seen that so far as mechanical events are concerned, the only time interval of interest to the shooter when using the simple trigger is the travel time of the firing pin from the release of the sear to impact on the primer.

The question may well be asked, then, as to what advantage does the set trigger offer over the regular form. If one were able to control the trigger finger perfectly, coordinating exactly the alignment of the sights on the mark with the release of the firing pin, the answer would be that the single trigger is better. Such is not the case, unfortunately, and given reasonable ability to align the sights, the constant effort of rifleman has been to so train eye, hand and brain that they will all work together.

The set trigger presents the advantage of using the trigger finger, with comparatively little effort and with little thought for the extent of finger movement as against the quite appreciable effort and very definite movement required to effect the release of the firing pin with the regular trigger. Thus with the set trigger, the rifleman may concentrate his attention on just touching the release at the proper time, without considering how much pull he has already exerted on the trigger or how much additional force will be required. Again, he will not use sufficient force to displace the alignment of the rifle with the set trigger. While in the case of the simpler trigger it is exceedingly difficult to exactly judge the pressure required without moving the weapon from its steady hold.

Considering the personal time reactions of the rifleman as the controlling factor, it must be admitted that, generally speaking, the set trigger is the best to use where extreme accuracy is the only requirement. Such being



A section of film strip from the oscillograph camera used during the test. Note the horizontal "time lines" crossing the parallel wire lines.

that in the service Springfield. This is made up of a trigger or finger lever, having a cam surface on the portion within the action, bearing in such a way that, as the trigger is pulled back, the sear nose holding the firing pin is

Summing up the mechanical operations necessary for the discharge of a rifle, it is evident that when using the set trigger, there are three sequences, while with the simple trigger there is but one. Assuming that the travel time of the firing pin is the same in both types, the mechanical action must of necessity be of shorter duration in the simpler form of trigger.

the case, the selection of that mechanism which will require the shortest time for operation is in order.

Coming to the details of the test in question, the investigations made by Major Waller, Commander Osburn, and other officials of the International Team led to the selection of four types of set trigger as evidencing possibilities for use on our International Match rifles. The first was what will be referred to as the German type, which is perhaps the most complicated mechanically of them all, yet which has proven to be quite practical in the past.

The second is known as the U. S. M. C. type, developed at the Philadelphia General Supply Depot of the Marine Corps. This trigger reflects the basic principles of the German type but in simplified form and with a higher degree of workmanship.

The third type is an extremely simple type developed by Sergeant Iorger of the Infantry team, while the fourth type embodied the Iorger ideas in more rugged form.

Of these triggers the test showed that the best results were obtained from the U. S. M. C. type when combined with the aluminum alloy firing pin.

Given the set triggers and special firing pins, the Aberdeen officials were faced with the problem of testing them. The logical medium for this test, it developed, was what scientists know as the oscillograph camera.

The oscillograph in effect comprised a motion picture camera in which time lines, caused by light admitted through a shutter opening and closing by means of an oscillating tuning fork, were recorded on a moving film.

In applying this apparatus to the problem in hand, the set triggers and special firing pins, in housings which consisted of ordinary Springfield receivers were clamped in a special base designed at the proving ground. This base carried insulated contact points, from which leads were taken to a galvanometer, included as part of the oscillograph apparatus.

The time records were obtained by recording the breaking of circuits in all cases except that registering the firing pin impact, in which instance the record was made by the closing of a circuit. The making and breaking of these circuits registered photographically, showing the vibrations of a fine wire in the galvanometer in response to changes in current, caused by making or breaking a circuit, together with the time lines above referred to. The picture resulting shows the image of the wire as long parallel lines across which there are printed at the rate of 1,000 per second short transverse lines which have been called time lines and which form the basis for measurement of the intervals between the galvanometer reactions recorded on the same film.

On study of the results of the tests it will be seen that, as expected, the single trigger will work faster than will the set trigger. The fastest time for events two and three was, in thousandths of a second, 1.63 for the U. S. M. C. type, including all four firing pins, while the all-aluminum alloy firing pin was slightly faster than that with aluminum alloy rod and steel point and sleeve; in all

DETAILED REPORT OF LOCK TIME TEST

Number of Action and Type of Set Trigger	Number of Firing Pin and Character of Material	Time Intervals in Thousandths of Seconds between Events			
		(1—3) Start of release of set trigger to start of firing pin	(2—3) Start of set spring (or for German type, of set trigger) to start of firing pin	(3—4) Start of firing pin to impact on primer	TOTAL (1—3) plus (3—4)
99254 Infantry Team	No. 1.—Al. alloy with steel point	9.1	5.2	5.87	14.97
468441 Modified Infantry Team	No. 6. Steel	10.55	4.05	7.53	18.08
992052 German	No. 2. Steel	4.2	2.1	5.2	9.4
992052 German	No. 2. Steel	9.17	.....	5.87	15.04
992052 German	No. 1.—Al. alloy with steel point	6.5	3.25	3.67	10.17
992052 German	No. 1.—Al. alloy with steel point	13.0	.....	4.87	17.87
992052 German	No. 6. Steel	15.2	.....	6.	21.2
992052 German	No. 8. Al. alloy	6.05	1.85	3.45	9.5
992052 German	No. 8. Al. alloy	8.8	.....	4.17	12.97
122356 U. S. M. C.	No. 1.—Al. alloy with steel point	.....	1.8	3.0	.....
122356 U. S. M. C.	No. 1.—Al. alloy with steel point	7.75	1.8	3.32	11.07
122356 U. S. M. C.	No. 1.—Al. alloy with steel point	.....	1.5	3.3	.....
122356 U. S. M. C.	No. 2. Steel	.....	1.5	5.0	.....
122356 U. S. M. C.	No. 6. Steel	.....	1.55	4.8	.....
122356 U. S. M. C.	No. 8. Al. alloy	8.3	1.6	3.14	11.44
122356 U. S. M. C.	No. 8. Al. alloy	10.65	1.75	3.0	13.65
122356 U. S. M. C.	No. 8. Al. alloy	.....	1.6	3.15	.....
Service rifle	Steel, regular	.....	.....	6.8	.....

actions, the time average for the former works out to 3.34 while for the latter it is 3.98. It is interesting to note that the travel time for the regular action and firing pin in the Springfield is 6.8, so that the alloy pin is about twice as fast as the regular pin. The overall time for the fastest action is probably in the order of 10 to 12 thousandths of a second, depending on the adjustment of the release trigger.

Small intervals of time, such as have been under consideration, are difficult to estimate, and the following may serve to present a clearer conception. Repeated tests with a micro split watch reading to hundredths of a second have been made to determine the time required to start and stop, that is to push down the head on the winding stem twice. Men with fairly quick time reaction and good control will do this in 150 thousandths of a second or 15 hundredths, while a somewhat slower man will require about 20 hundredths. If you place your hand on a table and tap twice with the trigger finger just as fast as

you can, the interval between taps will be, unless you are exceptionally fast, in the order of 100 thousandths of a second, so that the whole trigger action such as has been under consideration, could take place about eight or ten times in a like interval.

The following data were obtained, as has already been stated, at the Aberdeen Proving Ground and the report, while consolidated somewhat, is otherwise as submitted:

Aberdeen Proving Ground,
January 29, 1924.

Report on Test of Experimental Rifles, including Determination of Lock Time, and Detailed Functioning of Action, Published by Authority of Chief of Ordnance.

Ordnance Program No. 4514
T. S. T. P. 1923-235

1. Object: Four set triggers with four different firing pins were received at Aberdeen Proving Ground with instructions to find the fastest set triggers, the fastest firing pin, and the fastest combination.

(Concluded on Page 13)

National Match Rules Considered by National Board

By Kendrick Scofield

ASSURANCES that the Army General Staff looks upon the National Matches as an institution admirably fitted to be incorporated in the official military training program were given to the National Board for the Promotion of Rifle Practice, which met in Washington, February 14.

The board members gathered, following their annual custom, to consider the place and the date for the holding of the government competitions for 1924, and other matters pertaining to the development of marksmanship. As the result of its deliberations, the board recommended:

That the National Matches for 1924 be held at Camp Perry, Ohio, beginning September 25. This means that the Lake Erie match period will probably extend from August 30 to October 2, with a training school for R. O. T. C. and C. M. T. C. teams from the opening day to September 13; a training period for National Guard and civilian teams, from September 6 to September 13; an N.R.A. Match period from September 15 to September 24, with the National Matches closing the meeting.

That changes be made in the "elimination rule" governing the personnel of National Match teams, to the end of bringing into the matches more new blood, and in consequence increasing the national effect of these competitions upon the development of marksmen.

That a fourth class of competitors, to consist of teams from the Organized Reserve of the Army, be authorized in the National Team and National Individual Rifle and Pistol Matches.

That a trophy for an Intercollegiate National Team Match be provided for the purpose of encouraging the sport of target shooting among the major colleges.

That trophies be provided for the winners in the Organized Reserve Class in the National Team Match, as well as for the winners of the National Individual Rifle and Pistol competitions.

In the course of the meeting the board members were advised as to the status of appropriations for rifle practice promotion. These matters were reported as progressing favorably.

The Assistant Secretary of War, Dwight F. Davis, president of the board, called the meeting in his offices at the War Department. These members were present: Maj. Gen. George C. Rickards, Militia Bureau; Col. B. Frank Cheatham, General Staff; Col. C. E. Stodter, U. S. A., the Director of Civilian Marksmanship; Lt. Col. Morton C. Mumma, U. S. A.; Lt. Col. Harry L. Cooper, Office of the Chief of Infantry; Lt. Col. H. S. Miller, General Staff; and Maj. Thomas E. Thrasher, U. S. M. C. Representing the National Rifle Association and the country at large, there



Assistant Secretary of War, Dwight F. Davis,
President of the National Board for the
Promotion of Rifle Practice

were: Brig. Gen. F. H. Phillips, Jr., of Tennessee, Executive Officer and Recorder; Lt. Col. Smith W. Brookhart, of Iowa; Col. William Libbey, of New Jersey; Lt. Col. A. B. Critchfield, of Ohio; and Col. Fred M. Waterbury, of New York.

Before taking up detailed matters, the Assistant Secretary of War announced the appointment of Lt. Col. Mumma to be Executive Officer for the National Matches of 1924.

In presenting proposed changes in the National Match rules, especially directed at the so-called "elimination features," which specify eligibility conditions for team membership, Colonel Mumma called attention to the first proposed change, which limits the service group to one team from each of the service branches, National Guard and State civilian units. This change, he said, was for the purpose of making the team match the consummation of the best representation possible to put in the field, and not a lot of nondescript teams organized for the moment to enter the team match.

After this limit on teams had been approved, Colonel Miller announced that Operations and Training section of the General Staff hopes to provide for the attendance of two or three teams from the Organized Reserve this year. The discussion which followed indicated that the attendance of teams of this class might be expected to increase very rapidly in a few shooting seasons. Upon this showing the board voted a fourth classification in the National Matches to take care of these teams.

The most radical changes made by the board followed, accomplishing a new classification of teams according to scores in the team match, and forming the basis for the new proposed elimination rule.

The new team classification provides that:

"After the National Rifle Team Match, the teams shall be classified as Class A, Class B, Class C, or unclassified. In each of the first three classes, there shall be listed ten teams, and in addition thereto, such teams representing the several branches of the Army, the Marine Corps, and the Navy, as would be entitled to such classification by virtue of their respective total scores if there were but ten teams in each class.

"All teams not listed in Class A, Class B, or Class C shall be unclassified.

Based upon this classification the following "elimination rule" was adopted:

"At least fifty per cent of the shooting members of each team representing the several branches of the Army, Marine Corps, and Navy, shall be men who have never before shot as members of any National Match Rifle Team.

"No individual may be a shooting member or alternate on any National Match Rifle Team representing any of the several branches of the Army, the Marine Corps, and the Navy, who has heretofore shot on any National Match Rifle Team in more than one of the three National Matches immediately preceding.

"Teams other than those representing the several branches of the Regular Army, the Marine Corps, and the Navy, shall observe the following elimination rules:

"A team listed in Class A for the National Matches of 1923 or in the last National Match in which such teams competed shall have at least fifty per cent of its shooting members composed of men who have never before shot as members of an National Match Rifle Team.

"A team listed in Class B for the National Matches of 1923 or in the last National Match in which such team competed shall have at least thirty per cent of its shooting members composed of men who have never before shot as members of any National Match Team.

"Teams listed in Class C or unclassified shall be subject to the following elimination rule only, to which all other teams except those representing R. O. T. C., C. M. T. C. or Organized Reserve, are also subject, in addition to those prescribed above:

"No team may have as a shooting member or alternate any man who has been a shooting member of any National Match Rifle Team in three or more of the five National Matches immediately preceding.

"Exception to all elimination rules:

"For 1924, R. O. T. C., C. M. T. C. and Organized Reserve rifle teams shall not be subject to any of the above elimination rules."

The adoption of these limiting provisions in respect to the membership of National Match

teams will, in the opinion of the board and of the War Department at large, meet the desire of Congress, that if government funds are allotted for the holding of government competitions the matches be handled in a manner to give the most widespread effect, getting every year the maximum of new blood compatible with maintaining team standards.

In explaining the operation of the new elimination rules, Colonel Mumma said:

"The paragraphs which refer to service teams are simply a repetition of the rule which now obtains, and which has been in force for the last two years. That subjects the service teams to a more rigid elimination, and corresponding greater change in personnel than any team.

"The purpose of the next two or three paragraphs is to impose upon teams other than service teams a less rigid elimination clause, but still to make it necessary for them to have a large part of their personnel new men, so that we are not duplicating our efforts over an extended period of years. It has, as its further object, a sort of handicap. It is in effect a handicap race. It gives the team that has been habitually in Class C or Class B a little better opportunity to get to place in A. It would be unreasonable to suppose that those teams in Class C or Class B could ever win the National Matches, but we want to allow them to get as close to the top as possible.

"The purpose of the next to the last paragraph is to guard against the continued return of veterans to the exclusion of new blood. No team may have as a shooting member or alternate any man who has heretofore been a shooting member of any National Match Rifle Team in three of the five National Matches immediately preceding. It is evident after we have expended the training and after we have spent the funds to bring him for three years, if he has been proper material for military value he has in those three years gained enough experience to become an instructor and should thereafter devote at least some of his time to the development of others to replace him. The whole idea embodied here is merely an amplification of the idea we have had in force for some years. That is to spread out the instruction over a greater number of individuals. We have reached in rifle shooting the radio age. We have got to broadcast more widely than we have heretofore in order to justify the expenditure of the money we have been making."

As the elimination rule was at first proposed for consideration it provided the final elimination of shooters after they had attended the Matches for three years. This proposal was regarded by some of the board members unfavorably, and commenting upon it Colonel Stodter said:

"It strikes me that the provision of totally relinquishing a man after three years is too drastic. There are two sides to this. One has been presented by Colonel Mumma in that we want, of course, to spread the knowledge of rifle shooting to others, but there are ways of spreading it. The only way you can get civilians into the game is to make it interesting and attractive. They come in on account of

their interest. As far as they are concerned if you say to a man he can go three years and he cannot be a member of a National Match team thereafter it has the effect of somewhat killing his interest. He will not take the same interest in the game that he would if he felt that some time in the future he would have a chance to come back. In the case of a good many civilians it will have a serious effect on the men with whom they are associated. There are certain civilians whom we know as instructors in the game among civilians, and part of the prestige that they have is due to their ability to shoot, and not only to shoot but to coach others. It seems to me that they should have a chance to come back. Leave them out for awhile, but let them come back, say after two or three years or any reasonable time. So we could hold out to them some chance of coming back and not barring them forever after competing on three teams."

In reply, Colonel Mumma indicated that he would agree to any alternative which was reasonable, with the result that "three out of five immediately preceding matches" was specified.

Among certain administrative details which were considered at this point, rules were adopted which will give team captains greater latitude in selecting teams by increasing the time limit within which names must be submitted.

Further changes were proposed and adopted in connection with other events in the National Match Program. The rules governing the Pistol Team Match were so modified as to limit competition to one team in each of the several classes, paralleling the Rifle Team regulations, and radical changes were accomplished in the Individual Rifle and Pistol competitions.

Under the new rules, in the National Individual Rifle Match, for the award of prizes, all competitors will be classified as Regular Service, National Guard, Organized Reserve and Civilians, this latter category including C. M. T. C. and R. O. T. C. members. When this is done, these rules will apply:

The competitor, regardless of classification, making the highest total score will be declared winner of the National Individual Rifle Match.

In each class, badges shall be awarded in the proportion of one badge to each fifteen competitors (a remainder less than ten being disregarded), and gold, silver, and bronze badges shall be in the ratio of one gold to two silver to three bronze, remainders over an exact ratio being added to the bronze badges, provided that no badge may be awarded any competitor whose score is less than eighty-five per cent of the possible total score, and provided further that no competitor classed as a Distinguished Marksman may win any badge except that provided for the winner of the match. Distinguished marksmen will not be included in the number of competitors for the award of badges, and the term will be held to include corresponding qualifications in the Navy and Marine Corps.

A similar revision was adopted to be effective in the National Individual Pistol Match, on the ratio of one badge to each twelve

competitors, provided that no badge may be awarded any competitor whose score is less than seventy-five per cent of the possible total score, and provided further that no competitor who is classed as a Distinguished Pistol Shot under the provisions of Pistol Marksmanship shall be eligible to win any badge other than that provided for the winner. In the absence of such qualification this proviso will include any contestant who would be so rated by the standards set forth in Pistol Marksmanship.

Commenting upon the reasons for these changes in the award of prizes, Colonel Mumma said:

"The purpose of this modification, I think, is evident in the phraseology. Our experience of the past years, and particularly last year, has shown us that when the final bulletin is published for the National Individual Rifle and National Individual Pistol Match, that almost every medal winner was a member of the regular service and that all others were cut out. By classifying them in their own classification they can all compete for the gold medal which represents the winner. All are eligible to win that, but they are competing in their own class only. National Guardsmen are not particularly interested in what a service man makes. We are safeguarded by making the award of medals in the proportion of the number of competitors and further safeguarded by saying a man in order to win a medal at all must make eighty-five per cent of the total score, and I arrive at that by taking an average of the least scores over the past five years. That looks on the face of it as a high percentage, but it is not for the National Individual, and then we cut out the distinguished marksman and after he has won a distinguished he can win only the badge and one place."

For the purpose of considering any further modification of National Match rules which might seem advisable, the president of the board appointed this committee on rules: General Phillips, Colonel Stodter, Colonel Miller, Colonel Mumma and Major Thrasher.

Upon motion by General Phillips, the board took up the question of providing a trophy for the Organized Reserve in the National Team Match. Discussion on this matter developed that while the War Department is seeking to encourage the participation of teams of this class, it is as yet undecided whether such teams will represent Corps Areas or Divisions. If the latter is decided upon, it was pointed out that a numerically large class may be expected to result, there being twenty-seven Reserve Divisions as against nine Corps Areas. Approval of the motion providing the Organized Reserve trophy was followed by action authorizing trophies in the National Individual Rifle and Pistol Matches.

General Phillips then brought up the question of taking action to encourage the growth of rifle shooting as a sport among the major colleges, many of which have already entered a league, and have not only participated in the N. R. A. Gallery Matches, but have held a gallery championship match among themselves,

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N. R. A. Directors Hold Annual Meeting

THE gift of new trophies was announced, officers for the coming year elected, plans discussed for the development of rifle shooting among the major colleges, and addresses dealing with subjects of interest to riflemen were made at the annual meeting of the Directors of the National Rifle Association of America. The meeting was held in Washington on February 13.

Col. Smith W. Brookhart, president of the Association, opened the meeting by calling for the report of the Treasurer and the figures presented by Capt. Carl D. Loos showed that the past year had been a most prosperous one financially, with a net gain for the Association in its securities of \$5,918.53. The report of the Secretary, General Phillips, which followed, gave evidence that the general activities of the Association had met with an equal measure of success, with a marked growth not only in the number of contestants who participated in the Association matches last year, but in the individual membership of the N. R. A. as well.

General Phillips, emphasizing the fact that the interest in rifle shooting as a national asset from the standpoint of preparedness has been intensified and broadened, said in part:

"Your Association no longer confines its activities to the conducting of gallery and small-bore competitions for its individual members and teams representing affiliated civilian rifle clubs, but for the past year has been sponsoring competitions of all kinds for R. O. T. C. units, Military units, including the Army, Navy, Marine Corps, National Guard and Organized Reserves in addition to taking an active interest in the development of marksmen among the students of colleges and the members of state, municipal and industrial police forces.

"The co-operation which exists between the officers of the National Board for the Promotion of Rifle Practice and the N. R. A. has made possible many of the accomplishments of the past twelve months.

"The N. R. A. Gallery Matches and Small-Bore Matches were better patronized than ever before and the National Match attendance far exceeded that of any previous year. We were again in on international competitions; our small bore team was victorious; our Palma Team made a new record and our International Free Rifle Team set a record that has ever been equaled, and I assure you will never be equalled or excelled by any team in the future, unless it be by an American team.

"We added to our roster of life members 134 names; we affiliated 12,904 annual members, larger numbers than in any previous year. We organized 320 rifle clubs and had, at the end of the year, a gain of \$5,918.53 in securities and cash.

"What we have done speaks for itself. How these things were accomplished no doubt is of

interest to you. Our Executive Committee at its organization meeting in February, 1923, authorized the broadening of our field of action by the securing of additional office space and the employment of additional efficient office personnel; this, with the assured co-operation of representative members of our fraternity who do not hold executive or official position in our organization encouraged those charged with the administration of affairs to put forth their best effort.

"More publicity was secured than ever before. Of course, our most dependable organ for publicity is our official publication, the name of which was changed during the year from *Arms and the Man* to *THE AMERICAN RIFLEMAN*. We now publish ten thousand copies of the magazine each issue. The Association distributes a copy of the magazine to the Secretary of each rifle club, without making any charge for it. The news stand circulation has been built up and the popularity of the paper through this avenue of distribution has been surprising and gratifying as fully two-thirds of the two thousand copies sent out each issue are sold. The difficulties of producing this paper have, at times, seemed insurmountable, our chief trouble being our dependence upon commercial printers, many of whom prove utterly unreliable. A continuation of the publication of this paper is absolutely necessary to continue the life of the National Rifle Association. It costs money to publish and it is as difficult to determine just what expenditures should be charged to the paper as it is to credit the paper with revenues and value received. While our records show that more dollars have been expended on the publication than have been received from it, there is no doubt but what it is a paying proposition for the Association because of its value as our official publication.

"Our publicity department has distributed many worth while articles and a lot of action pictures to other magazines and daily papers, especially those printing rotogravure sections. The articles and pictures were used and the popularity of rifle shooting increased thereby.

"Your executives have taken a keen interest in promoting the work of the Inter-collegiate Association of N. R. A. Rifle Clubs. This interest was brought about by the attendance at their meetings of a representative of the Association, learning their viewpoint, giving them information as to what we could do and were willing to do for them, directing them in their organization work, conducting matches for them, some by mail, others by gathering teams on a range for shoulder to shoulder matches, and contributing a trophy and medals as incentives.

"The service we have rendered during the years is definitely reflected in the gains in membership. The expenditure of less than our income was responsible for the gain in our values of security and cash.

"Such services as letter writing, distributing circulars, publishing the magazine and pamphlets of information including our match programs, is not the limit to which your organization goes. We undertake to procure for any rifleman any equipment or supplies that he may desire for his use. This is done by carrying a limited line of supplies, and procuring by mail orders articles not carried. This is accomplished under the operation of a revolving fund for that purpose.

"In reviewing the work of the year and endeavoring to tell you how things were accomplished, of course, we overlook the many difficulties that we have had to contend with and unpleasant instances that are bound to occur, and dwell upon those accomplishments that were of value and remember those influences that were

of assistance and endeavor to forget those that attempted to hinder. You know quite as well as I do the many men that work to promote our activities in an unselfish and broadminded manner. I would not undertake to report them by name for fear of inadvertently leaving out some deserving one. All branches of the Government service have co-operated to the fullest extent, the Ordnance Department has continued its efforts to serve the membership of the Association; the General Staff has done what it could to make successful our undertakings and has come to realize more than ever before the true and big military value of the work we are doing; the manufacturers of arms and ammunition through their representatives that come in contact with us, are daily evidencing their keen interest in our work from the broadminded point of view and have practically eliminated any thought of the commercial gain that might result from their so doing. The magnificent trophies that they have presented to the Association during the past year added keen interest in the matches for which they were given, and I am sure will do much to encourage the participation of riflemen in small bore shooting which is becoming increasingly popular. The value of the work done by the Director of Civilian Marksmanship is inestimable.

"We are well started on the activities for the year 1924. We have already enrolled 24 life members, 7591 annual members, and 519 rifle clubs have reaffiliated. We are in the



Col. Smith W. Brookhart, of Iowa, re-elected President of the N. R. A.

midst of our gallery matches, the increase of entries being most satisfactory. Our program for the small bore matches for the year is now on the press and we have, we believe, met the desires of the riflemen by incorporating in that program a number of pistol matches and matches for the service rifle to be shot on the club's home range.

"Our plans are well under way for the organization of the International Team that will represent the United States in the matches of the International Shooting Union and in the matches as scheduled for the Olympic Games.

"Reasonable legislation for the requirements of the National Board were incorporated in the Budget Officer's estimate, and with that accomplished, we are assured Congress will provide what in their opinion is reasonable.

"Your executives will need from you the same unstinted loyal support during the coming year that it has been their good fortune to receive during the past year. Your co-operation and constructive criticism, in addition to the active work you will do in the way of publicity and while actually engaged on the rifle range, will insure 1924 as the N. R. A. banner year."

Colonel Brookhart, in submitting his report as president, told of his efforts last year to interest the riflemen of England, France, Denmark and Switzerland to send teams to the International Matches at Camp Perry. Col. Brookhart declared that he saw little hope of ever obtaining a representative attendance of foreign teams when the matches were held in this country, and added: "I believe that if we are going to continue to participate in these matches, we will have to go over there to do it: I don't believe they are coming over here."

Col. Brookhart discussed the work done by the committee of which he was a member toward increasing the capacity of the Camp Perry Range according to the plans outlined during the matches last fall, and predicted that with the completion of this work the Lake Erie Range will be the most remarkable rifle shooting center in the world.

He expressed himself as being hopeful that some way will be found in the near future to finance civilian teams at the matches, but suggested that it may be necessary to adopt a different method from that used in the past and put the team membership upon a completely competitive basis.

He told the directors that the N. R. A. is rapidly approaching the financial state where the erection of a N. R. A. headquarters building will be justified.

Following the submittal of reports, Maj. K. K. V. Casey of Delaware obtained recognition and said: "In consideration of the unusually fine showing made by the reports of the officers which we have just heard, I move that the confidence of the directors in the Association officers take the form of a unanimous re-election of the present incumbents." The motion was carried, and these officers named to serve through 1924: President, Senator Smith W. Brookhart, of Iowa; First Vice-President, Lt. Col. Frank Maloney, Tennes-

see; Second Vice-President, Col. Fred M. Waterbury, New York; Third Vice-President, Major A. B. Critchfield, Ohio. Treasurer, Karl D. Loos, Illinois; Secretary, Brig. Gen. Fred H. Phillips, Jr., Tennessee. Additional Members of Executive Committee: Brig. Gen. Harry B. Smith, the Adjutant General of Indiana; Lieut. Col. Morton C. Mumma, Cavalry, U. S. A.; Major R. D. LaGarde, U. S. A., Retired, District of Columbia; Major L. W. T. Waller, U. S. M. C.; Major W. W. Buckley, U. S. M. C.

When the ballot had been cast in the election of officers, General Phillips introduced Maj. Maddux of the Chemical Warfare Service who, on behalf of Brig. Gen. Ames A. Fries, declared that his service was desirous of presenting a trophy to be awarded in a match wherein all the contestants were required to wear the regulation gas mask. Maj. Maddux stated that it had been proven time and again that good marksmanship was possible under these conditions, and that the competition would tend to encourage men to fit themselves for accurate shooting of this kind which might be required of them in time of war. On motion by Lt. Col. Critchfield, the trophy was accepted.

Col. James A. Drain, one of the past presidents of the Association, then tendered a trophy to be awarded in a match wherein automatic or semi-automatic rifles will figure.

"As we grow older," he said, "we 'old timers' in the Association become more convinced of the value of rifle practice as a builder of morale and manly virtues. I am consistently in favor of the continuation of the activities of the N. R. A. small-bore and gallery matches. The man who knows how to shoot any kind of rifle—small-bore or high power—will not be stampeded when he gets into danger.

"However, we already have many matches for the small-bore and the high power rifles, and tonight I wish to suggest a new match intended to further interest in the development of shoulder arms of semi-automatic and automatic types. If such a match is included in the competition schedule I stand ready to present a suitable trophy."

Many of the directors present expressed themselves as favoring such an event, and Colonel Drain's offer was accepted.

The question of how rifle shooting can be encouraged among the colleges was brought up by Col. William Libbey.

"Since graduating from the presidency of the N. R. A.," said the Colonel, "I have been taking a post graduate course in the college field. During the war a great number of our officers were drawn from the colleges.

"It is ridiculous that we should never have had one of the major colleges represented by a team at the National Matches. I believe that a great number could be induced to take part in this sport of ours. In overlooking this possibility, we are making a mistake, and I think that this Association should provide a match or matches whereby these groups of men may get together and shoot shoulder to shoulder." Colonel Libbey

told of the progress which has already been made in the Intercollegiate organization and asked for the co-operation of the associations in this work.

Brig. Gen. Kenzie W. Walker, Chief of Finance of the War Department, was among the guests, and Colonel Brookhart called upon him to address the directors. General Walker spoke upon the question of financing the National Matches and declared that he believed that if once Congress understood that the rifle practice system as now followed in this country is a direct and important contribution to National defense, that adequate appropriations would be forthcoming. "I have always felt kindly" he said, "toward any proposition relating to rifle practice, because I feel that we get more return, dollar for dollar, for money expended in this way than for any other money the government expends."

The Director of Civilian Marksmanship, Col. C. E. Stodter, pledged himself to do all that he can to encourage the sport of rifle practice so long as he remains in office. He reported a very gratifying extension in the work of his department and commented upon the fact that banks throughout the country are taking an interest in shooting, and that the financial institutions of Iowa have organized a state marksmanship association. He said:

"The records of the Office of the Director of Civilian Marksmanship for the year 1923 indicate a continued interest in rifle and pistol shooting by civilians.

"The number of qualifications made by civilian riflemen, both with the rifle and with the pistol, exceed those made in any previous year. During the year the following qualifications were recorded in this office and the appropriate badge issued:

RIFLE	
Expert	441
Sharpshooter	2,820
Marksmanship	5,196
Total	8,457
PISTOL	
Expert	245
Sharpshooter	503
Marksmanship	781
Total	1,529

"One of the interesting developments of the year has been the considerable number of police rifle and pistol clubs that have been organized in the various cities and among the police officials of railroads and other industrial corporations. The Iowa Bankers Association has continued its interest in the promotion of rifle and revolver practice among its members, and the first State Rifle and Revolver Competition of the Iowa Bankers was held at Fort Des Moines, Iowa, on October 17, 1923.

"There has been a considerable increase in rifle shooting in schools and colleges. Intercollegiate rifle matches are now an established feature, and rifle shooting has been recognized in most of the schools and colleges as entitled to the same support as other sports. This office has 1,340 active rifle clubs and 100 schools on its records. The issues to these

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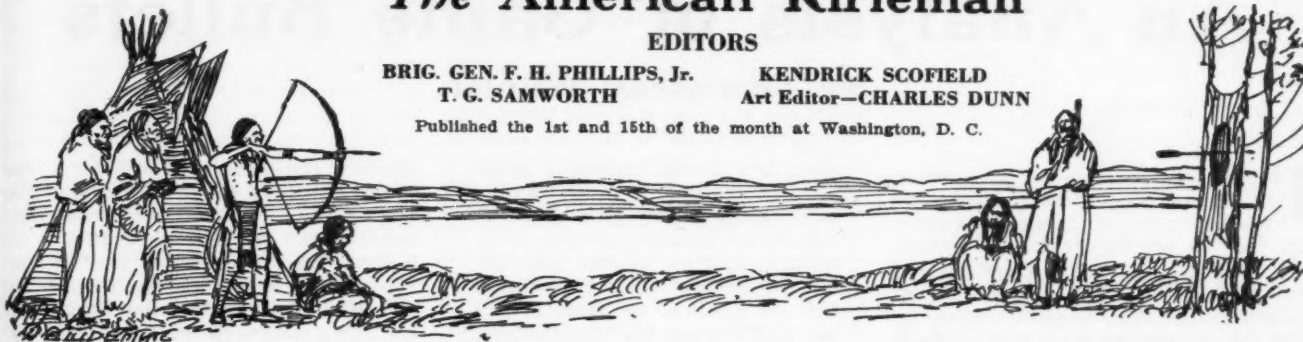
The American Rifleman

EDITORS

BRIG. GEN. F. H. PHILLIPS, Jr.
T. G. SAMWORTH

KENDRICK SCOFIELD
Art Editor—CHARLES DUNN

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"The United States will be hard to beat because they have the whole resources of the Ordnance Department behind them."

THIS is how the editor of the British *N. R. A. Journal* sums up the chances of an English team in the next International Matches. It may not be flattering to the members of the team squad to feel that at least one very well worth-while competitor believes that they are formidable largely because of the their weapons, but it emphasizes strongly the value of the co-operation which exists between the men who design and manufacture Army weapons and the men who employ them in sustaining our national prestige in the world of marksmanship.

Whoever is familiar with the methods followed in selecting the personnel of international teams cannot be otherwise than convinced that the most able of American

Evidently, "It's the Gun behind the Man"?

shots available are to be found shooting under American colors in these competitions. The selection of these men is based upon rigorous elimination shooting of the sort best calculated to develop and demonstrate to the skill of a candidate under all conditions, or to disclose any handicap under which he might be shooting. With these facts in mind, it is fair to assume that, given an opportunity to familiarize themselves with any other high-grade weapon, any of the American teams of the past few years would have won their victories just the same.

Without, however, in any way detracting from the high degree of personal skill evidenced by our American marksmen, the statement of the editor of the *British N. R. A. Journal* is a well-deserved appreciation of the work our Ordnance Department is doing and to a large degree is absolutely true. Every nation has the opportunity to develop expert shots. Whether their efforts are attended by the success which has followed this work in the United States, England, Switzerland, France, and Denmark, depends largely upon how much time and attention is devoted to the problem. After the men have been selected, however, they may be aided or handicapped in their work by the degree of encouragement received from their governments in the matter of perfecting suitable equipment for them. The more such encouragement a team enjoys the greater its chances for victory, and the Ordnance Department of the United States Army has unquestionably contributed materially to the winning of the championships now held by American marksmen.

THAT the National Matches are of potential importance in the training plans of the War Department is a fact which may be expected to exert a far-reaching and beneficial influence on the future of these competitions. Colonel H. S. Miller's statement concerning the attitude of the General Staff to the Matches as an institution, made before the members of the National Board for the Promotion of Rifle Practice, should be read carefully by every rifleman who is interested in the progress of his favorite sport.

Those who have kept closely in touch with marksmanship affairs during the past few years will readily recognize in

The Views of the General Staff

Colonel Miller's statement the culmination of a trend of affairs, which to the observant has been manifest for some time in the increased interest which many high ranking Army officers have been taking in the sport of rifle shooting. There have also been present at recent National Matches several officers capable of forming mature and accurate opinions upon the relative value of the annual shooting camp to the problems which are involved in the work of the training section of the General Staff. Such officers have been more than welcome, and have been afforded a full opportunity to observe the workings of the big camps. The wisdom of encouraging the presence of such guests is now apparent and is bearing fruit.

Friendly interest and co-operation on the part of the Training Section of the General Staff means added stability to the matches as an established institution with a consequent widening of the field in which the greatest development of marksmen is possible. The rank and file of the Army has always been predisposed to indulge in marksmanship. Straight shooting is an American soldier tradition as well as one of the fundamentals in the education of a fighting man; it is also the medium of a most attractive form of sport in which it is logical for the enlisted man to take keen interest. But this predisposition could not reasonably be expected to bear fruit so long as the officers in direct command of troops were either apathetic or actively hostile to target shooting. The participation of officers in the sport of target shooting and constructive practical encouragement from high ranking officers, however, will eradicate this handicap which has in the past hindered the spread of rifle shooting as a sport in the Army, and the present splendid attitude of the General Staff will aid in its rapid accomplishment.

An Analysis of Game Bullets

By Townsend Whelen

Part II

IN Part I, I pointed out that while certain of our cartridges and bullets were fairly satisfactory for all American big game, that they all left something to be desired, and that they could not be considered also even fairly satisfactory for the soft-skinned big game of all other countries. I tried to show that no expanding bullet so far invented could be relied upon to expand and still hold together at very high velocities, but that it was possible to construct a relatively heavy bullet with thick jacket and with only a pin head of lead exposed at the point, which would mushroom well up to a velocity of at least 2,400 feet per second, and still hold together so that it would always penetrate through thick muscle and bone into the vitals of an animal. But we lack experience in America with such bullets, and so this Part II will be devoted to showing by the experience outside America that such a bullet is very much superior to anything that we have been using in this country.

Africa and India each have a wealth of big and small game alongside of which the fauna of North America becomes almost insignificant. For over a century English sportsmen have been pursuing this game with the rifle. Hundreds of them, often British officers on colonial service, have had a lifetime of experience at it. It is a fact that they have specialized on rifles, cartridges, and bullets for big game quite as much as we have. Since I started this series of articles I have been privileged to see a letter written to a firm in this country by the largest firm of sportsman outfitters in India, which is so interesting that I am going to quote it in part.

"Assuming that we are correct in our assumption that you have not yet studied matters on our side, it may interest you to know something of our conditions. In the first place you must remember that your customers in India are all experts; in no other country in the world are the public so well educated in all that pertains to sport and fire arms. For the great majority of our customers are officers of the Army and Civil Service—men of good family who at home are accustomed to game shooting from childhood, and who have all their lives taken the greatest interest in firearms, and to whom the great attraction of Indian Service is the promise for sport it affords. The countrybred Englishman, and Eurasian of good position, too, are accustomed to firearms from boyhood. . . . You will understand therefore that anything really good and new, or an improvement on existing styles, has a good public here. But it must be put forward in a rational way, and sensational statements, not borne out by facts, are worse than useless. To send pictures, as one American firm has

done, of a cowboy attacking a grizzly with an automatic pistol only raises a smile. Indeed, judging from the tone of some of your advertisers, one is led to the conclusion that the American game animals are a very soft lot and die very easily. Here we believe in the special rifle for each kind of game. For dangerous game always the double barrel and the big bullet with high velocity, the solid bullet for pachyderms, and expanding bullet for soft-skinned game; and the very small bore super-velocity idea has been utterly exploded. . . ."

There are at least a dozen manufacturers of sporting rifles in England specializing on rifles for the big game of Africa and India whose names are better known the world over than that of any American arms manufacturer, with the possible exception of the Winchester. We can get a lot of information from the English, and we will find some particularly valuable data if we turn to the writings of several celebrated British hunters of lifetime experience on the big game of the world.

Going back no further than the advent of high power weapons, which all British sportsmen concede are vastly superior to the old black powder arms, we find three rifles and cartridges figuring very extensively in all English literature.

1. The .256 Mannlicher, often referred to simply as the "Mannlicher." This is an older type of what we know as the Mannlicher-Schoenauer rifle, using a rimmed case, but practically the same bullet so far as size and weight is concerned, but not so far as construction is concerned. Weight of bullet 156 grains. Actual muzzle velocity 2350 f. s. The Mannlicher-Schoenauer rifles and their cartridges that we know seldom give over 2200 f. s. muzzle velocity.

2. The .275 Mauser, often referred to simply as the "Mauser." The cartridge is identical with the 7mm. Spanish Mauser cartridge. Weight of bullet 175 grains, muzzle velocity 2300 f. s.

3. The .303 Lee-Enfield, usually spoken of as the ".303." This rifle shoots what we know as the .303 British cartridge. For sporting purposes it has been used almost entirely with either a solid (full-jacketed), soft point, or "Dum-dum" bullet. This latter has a small hole drilled in the point, but is otherwise similar to the solid or full-jacketed bullet, and expands and flies to pieces less than the soft point bullet. All bullets weigh about 215 grains, and the muzzle velocity is about 2000 feet per second.

In late years all of these cartridges have been considerably increased in velocity just as ours have, but also like ours, not always with any increase in their killing power on large game. The English also have a multi-

tude of slightly larger rifles—.350, .375, .400 caliber, etc., which however are rather losing in popularity in recent years with the exception of the .375 Magnum made by Holland and Holland, which has become quite popular. This rifle and its cartridge was described by me in *THE AMERICAN RIFLEMAN* about a year ago. Then there is the class known as "Elephant Rifles," ranging in bore from .416 to .600, and intended entirely for thick-skinned game. The table gives a fairly representative list of the more modern English rifles and their cartridges.

Before going into the experience of noted English hunters it will be well to call attention to the fact that quite rightly they lay great stress upon the construction of the bullet. Their vast experience has taught them that this is quite as important as bullet weight and muzzle velocity. It is, indeed, in this matter that we gain our most valuable lessons from them.

In almost all writings of British sportsmen on the subject of big game rifles, we find a strong recommendation for the use of a heavy double barreled rifle for dangerous game at close quarters. It is usually stated that the sportsman has no time in which to function a magazine rifle for a second shot on a charging beast, and that he is more accustomed to a double barreled weapon from his close association with the double shotgun from boyhood. Also that a charging lion comes at the incredible speed of about 100 yards in nine seconds, and that other dangerous game also charge with great rapidity. . . . It seems to me that these remarks do not pertain with equal force to us Americans, even when we hunt in Africa. We are not so thoroughly accustomed to the double barrel. In our shotgun work many of us use pump guns. But a majority of our riflemen are extremely skilled in the use of the Springfield and Mauser rifles with almost uncanny rapidity. Even the sportsman without military training can in a short time become familiar with the mechanism of rapid fire. This training enables sure and rapid manipulation of modern, properly adjusted bolt action rifles, and can be learned in about two weeks, practicing the snapping of the rifle and the working of the bolt twice a day for ten minutes at a time. It is described in great detail in my book, "The American Rifle," and is now also included as an essential part of military instruction in the Army training manual "Rifle Marksmanship."

The mechanism of rapid fire can also be practiced in camp—snapping and working the bolt without ammunition. Snapping practice does not injure the Springfield or Mauser rifles, but will injure double barreled rifles. In this way the sportsman can speed up his operation of the mechanism of Springfield or Mauser rifles (but not the Mannlicher

to the same extent, due to the location and shape of the bolt handle) to the point where he can deliver a second aimed shot as quickly as with a double barreled rifle, and moreover with the magazine rifle he still has more shots at his command after he has fired two.

Then there is the economical side of the question. The construction of a reliable double rifle requires the highest degree of skill if it is to be a reliable weapon, and if the two barrels are to shoot in the same place. There are only about half a dozen English gunmakers capable of turning out such a weapon (although many more there and in Germany attempt it but don't succeed), and such is the cost of manufacture that they are compelled to charge a very high price for these weapons. Such a rifle cannot be obtained today for less than about \$750.00. But a first-rate heavy Mauser magazine rifle of from .375 to .425, or even .505 bore, suitable for heavy, thick-skinned game can be obtained in England for about \$250.00; or a similar rifle made entirely in the United States with Springfield or Mauser action, which has proved thoroughly reliable on heavy African game, can be had for from \$175.00 to \$200.00. This difference is quite enough to pay the expenses of an additional month of hunting in Africa.

The following interesting incident from Sir Alfred Pease's "Book of the Lion," will serve to illustrate the rapidity of fire that can be accomplished in a tight corner by a man thoroughly trained in the mechanism of rapid fire with a magazine rifle.

"On the 20th of June, 1909, I got my friend Mr. R. Allsopp, and my neighbor, Mr. H. D. Hill, to give me a hand and see if we could not get rid of some of these lions, for they were becoming a nuisance, being very near the house, frequenting the main path to it, making it jumpy for everyone of us when taking this track home at nightfall, and endangering the lives of our boys and horses when sent to water morning and evening. The previous day one of them had killed a kongoni in sight of the house at dawn, and Allsopp and I had come close onto them when poking about in the bush. On the day in question we determined to try and drive the whole of the bush towards the plain. With such force of boys and dogs as we could muster, I went with my wife and daughter and our ponies along the crest of the ridge above the bush, and took up a position from whence we could scan the whole of the surrounding plain. Hill, Allsopp, men, and dogs started the drive. We heard their shouts and watched for some time the impala, kongoni, zebra, and granties pouring out of the covert, also a hyaena lobbing away, now and again twisting his hideous head round to look back. Then I saw two big lions slouching along across the open spots in the bush and slanting up the hill. Before I could get to my horse they were across the ridge about a quarter of a mile off, and by the time I was in the saddle and my horse going they were out of sight. A short gallop brought me into view of them, indeed I had taken a short cut that put me nearer to them than I wanted to be, but they paid little attention. The smaller of them broke into a gallop and took a long lead, the larger trotted

steadily forward on the same line, a great hulking brute that shook all over as he went along. The line was across ridges and wide brush-sprinkled valleys. As we rose the first hillside out of the first valley at a canter, with the heavy lion 150 yards on my left, I fired a shot from my Mannlicher in the hope of bringing him to a stand. He turned and stood for a moment with a diabolical scowl on his countenance, back went his ears, up went his tail, as he walked about three paces towards where I had reined up; before he had begun to trot I was in full flight up the hill, knowing that he meant business. He coursed like a greyhound, but gave it up in less than a hundred yards—he was too fat for that game—and he resumed his line at a steady trot, and paid me no more attention. I now kept 200 yards to his right, parallel with him down the slope into the next valley; on reaching the donga in the bottom he went into a tiny reed bed and lay down out of sight. I now halted my horse at 120 yards or so, and waited for some of the others to come up. After what seemed a long dose of sentry-go, my gun-bearer on foot with my 10-bore, and Hill and Allsopp on the ladies' ponies, arrived on the scene. Hill carried a .404 Jeffery cordite rifle (Mauser breech action—T. W.), Allsopp a double barreled .450 cordite. We agreed that it was impossible for a lion to get through this array, we would go straight onto him at once on foot. I was quite sure he would charge us straight, but equally confident he could not reach us; but he very nearly did, and that is the whole point of this tale. We walked up to within nine paces of him, being on ground that sloped downward to the little patch of reeds which concealed him. Then we halted and a stone thrown by Allsopp brought him out with a terrific grunt—flying straight at us. Bang! went all the guns together without any apparent result, and I only got my second barrel off at five short paces—over he went. Now what happened was this: Hill, with that wonderful speed in firing a single-barreled magazine rifle characteristic of South Africans, got in two if not three shots; two struck, one of these hit the lion full in the nose, breaking teeth, cutting along the roof of the mouth, and lodging in the base of the skull. This had no effect on the fury and vigor of his charge. Allsopp's shot only slightly wounded him, and my first barrel struck him where the neck and shoulder join, the ball passing under the shoulder blade, raking along his ribs till it stuck in the skin at his hip. All these shots appeared to have no effect on the charge, and might as well have been misses as far as our safety was concerned, though such was Hill's rapidity of fire I would not like to say he could not have gotten in yet another shot (the last in his magazine) if my second bullet had played me the same trick as the first. I have heard that the nose shot is not a safe one with tigers, but it is a revelation to me that with a powerful rifle a few feet off it is practically useless on a lion†, and I suppose one might fire fifty 10-bore balls into a lion's neck without one glancing as my first bullet did. But I call that

† The late Mr. George Grey, who was fatally injured in 1911 whilst hunting lions with me, hit the charging lion in the mouth and broke his jaw at 5 yards range with a .280 Ross copper pointed bullet without checking or turning the charge in the least.

a courageous lion to face so many standing together and go through so much heavy lead from very powerful weapons fired straight at him at two or three yards range, particularly when he was fat, gorged, and unwounded.

(To be continued)

* * *

Handloading 45's

By Thomas C. Harris

HAVING recently fired a thousand or so of hand-loaded cartridges out of my Colt .45 automatic pistol, I note one or two odd things in the behavior of the reloads and one of them relates to the lubrication I use on the bullets. I cast my bullets of lead, alloyed with ten or twelve per cent of tin, to harden them, and grease them with tallow or the melted pieces of a low-grade of candle. I dip them for about a second, base down, just deep enough in to the hot grease to fill the canelleures. This grease chills instantly on lifting out the bullet, and always leaves a thin film of grease covering the base, about as thick as a visiting card.

The bullets weigh 225 grains and are seated in the shell over a charge five and a half-grains of du Pont No. 5 pistol powder. Any grease showing on the bullet or the case is then carefully wiped off with a rag. This load I find very accurate, and leaves no trace of lead in the barrel. Have placed as many as fifteen successive shots in a three-and-one-half-inch circle, at fifty feet, and the penetration is four one-inch pine boards and then some.

Have recovered many of these bullets, after passing through the four inches of pine, and find that some of them have the film of grease still intact across the base of the bullet. The surprising thing about the matter is that the hot gas from the powder charge does not always melt the grease, though directly exposed to it.

Am of the opinion that the bullet is in contact with the hot gas for so short a time that the grease does not always melt. While visiting an iron foundry once, I saw the operator who draws the molten iron from the furnace, quickly slap his bare hand through the flowing iron without harm. The extremely short time of exposure must produce the same effect on the grease.

In the days of my youth, which was in the days of muzzle-loaders and black powder, we used round bullets with a patching of greased cloth. I noted that the patch of cotton twill was never burned, though blackened by the powder. The idea came that some sort of patching in the modern military rifle would give superior accuracy and save the barrel from undue wear. With this idea in mind I devised a boat-tailed bullet, using a patch lubricated with grease and graphite, to be used in the Krag rifle. This scheme was published with a drawing of the same, in *Shooting and Fishing* magazine, in March, 1906, now eighteen years ago. My military friends told me that the heat of the powder charge would destroy the patch, but I still believe it will work all right.

National Match Rules Considered by National Board

(Concluded from Page 6)

and are planning an outdoor championship match at Annapolis in the spring. General Phillips said:

"I think it would be proper for the board to provide a trophy for the National Intercollegiate Competition. We have had difficulty in getting the college men to attend the National Matches generally on account of the time that it is held, because of the fact that the vacation of the colleges just precedes the holding of the matches. Much interest has been engendered in the colleges, and we hope to increase that interest, and they are now engaged in the small-bore competitions by mail, which the board conducts for them. They have taken enough interest to get together on a range and shoot shoulder-to-shoulder gallery matches, and last year a shoulder-to-shoulder service rifle match; and they propose to do the same this spring at Annapolis; and if we can recognize their activity by providing a trophy, in as much as we cannot arrange to get them at the matches at Federal expense, we think it would promote rifle shooting in that department."

Colonel Brookhart inquired whether the Intercollegiate match would be a separate event from the National Matches and was informed that it would be.

Colonel Libbey, who is president of the Intercollegiate league, speaking in favor of the motion said:

"I might say, as president of the Intercollegiate Association, that I have been trying to work up interest among the clubs in the colleges because I saw it was absolutely dead and hopeless under present arrangement. In the history of the National match we have never had more than one big college, and all of our efforts even in the small-bore rifle competitions have only succeeded in developing forty or sixty men in the institution instead of a large, flourishing organization, and I hope that this step will be taken because it will encourage the men in the development of the matches not only indoors but outdoors, and that is where we want to develop. We have been working at it for two years, and this is the result: the indoor matches held in New York and the proposed match in Annapolis; we had eleven teams, and we had a first-class match. If the arrangements, as proposed for Annapolis, are carried through, I think we might induce West Point to invite the Intercollegiate authorities to come up there. We could alternate it as much as possible to relieve the expense, because they have been doing it all at their own expense.

Dates for the National Matches were then considered. While every effort was made to adjust the match period so that it would fall earlier this year, the present appropriation system coupled with the War Department summer training program and the Ohio National Guard camp schedule, prevented this. Adjutant General Henderson, of Ohio, placed before the board the difficulties he had encountered in attempting to change the schedules of his State

camp, and Colonel Mumma in discussing the situation said:

"We have run into a great many difficulties in regard to late September. Most people's vacations are over by that time, and yet, in spite of that, we had more people there last year than ever before; and I presume that the same will be true whatever we do. We must make it possible for the college and high school group to get back to their respective institutions within a reasonable time after the opening day. So, we will have to make some arrangement to let them loose not later than September 18th. I have gone into the matter quite carefully, and if we can get them through by September 18th, they can get back to their work. If we have to go into September, opening about the 3d and closing about the 30th, we can make arrangements to bring in the C. M. T. C. and could start right to work on them and get them in the school in advance of the arrival of the other teams. They would have a longer school period, and we could carry them through the school, and then we could have for them a special R. O. T. C. and C. M. T. C. Match, or we could allow them to shoot the National Match Course under the general rules and regulations in time to enable them to leave by September 18th, simply indicating their scores in the general results of the match. There is very little difference in the conditions from day to day, and particularly now that the match is done under expert coaching. The weather conditions do not make much difference. Under the supposition that the Ohio Guard cannot leave camp earlier than the 27th, then I suggest that this rules committee be authorized to select the dates as a result of further developments in the matter, and that these dates be co-ordinated with the National Guard Program so the best interests of all may be served."

Colonel Mumma also emphasized the difficulty in securing range personnel until after the training activities of the Army were over.

The rules committee of the board, considering the question of dates following the board meeting, approved a schedule which fixes the match period from August 30 to October 2. Few, except administrative, changes were made in the rules. The course of fire for teams of ten shooting members remains the same. The definition of the offhand position to be employed, however, was amplified. As it now stands, the use of the sling is forbidden, and the sling must remain on the rifle in parade position; the forward hand shall be extended so that the arm will be entirely free from touching or resting against the body. Coaching, while authorized, has also been regulated. The 1924 rules specify that when coaching is permitted, a coach may take his place on the line and between the men of the pair firing, but he cannot shift his position in relation to the position of the men firing for the purpose of forming a windshield for the firers.

With the regular business of the meeting disposed of, Col. H. S. Miller requested that

he be permitted to present the views of the Army General Staff, and particularly the Operations and Training Divisions, upon the National Matches and their relation to national defense.

"The consensus of opinion in regard to the National Matches," said Colonel Miller, "is that there is no question but what they are and have been a great value and will continue to be so, both in the training of instructors and in the development of material, ammunition and rifles. They are considered to have been very well conducted, indeed, during the past few years, and it will be supported in every possible way within the means at hand. By that I mean personnel and the funds; and the War Department, as you know, is pretty seriously cramped now in regard to that."

"Last year the training programs of three corps areas were somewhat absorbed to furnish the personnel. That was due a great deal to postponing from time to time the question of furnishing the personnel, and the whole question of the National Matches as far as the War Department is concerned, and they have been trying to push it along to incorporate it where it should be in the training program of the Army. We have the summer program which is very extensive and very necessary and every enlisted man and officer we can dig up, and it has to be very thoroughly stated in order to save lost motion of time and personnel."

"This year we are trying to incorporate it in the training program and not disturb the program of the corps areas. One regiment will be set aside to furnish the personnel—the 28th Infantry and that will be increased to peace strength and that will amount to twelve hundred officers and enlisted men. That leaves a considerable number of officers to be furnished separately, and also various details from the different branches functioning—Quartermaster, etc. They will be based on the operations of last year. The funds expended, I might state, were in the neighborhood of six hundred and seven hundred thousand dollars, counting all branches and components."

"The question of giving the National Guard and other teams a look-in to the top place is one thing the Staff is much interested in, and the steps taken in the new rules, I know, will be very gratifying. In discussing that with various Marine officers, they thought it would be essential either to give them a score handicap or something of this sort. Another thing is a greater introduction of new blood, and that is being accomplished, which is also gratifying. The organized reserve teams—we want to get the organized reserves interested in it as organized reserve units."

"There is another question I want to present to the Board for consideration either this year or next, and it is not a reflection on the present management at all, because that is considered to be highly efficient, in every way, and that is to place a general officer entirely satisfactory to the National Board and the War Department, in command during the active period, placing, of course, the bulk of the technical supervision in the executive officer, as it has been in the past."

N. R. A. Directors Meet

(Concluded from Page 8)

organizations during the year amounted to \$123,450; 2,186,100 rounds of .30-cal. ammunition and 6,030,000 rounds of .22-cal. ammunition were issued to clubs and schools, making a total of 8,846,100 rounds of ammunition of all kinds; 919 .30-cal. rifles and 403 .22-cal. rifles were issued.

"The sales during the year amounted to approximately \$125,000. A total of 5,028 rifles of all kinds were sold during the year, and of these approximately 4,000 were obsolete arms of various types which were sold at a very low price. The remainder consisted of the model 1903, .30-caliber rifle, a few special heavy barrel match-rifles, and .22-caliber rifles of various types. 3,765,296 rounds of ammunition of all kinds were sold and of this amount 1,306,300 rounds were .22-caliber ammunition, while the rest was made up of various types of .30-caliber ammunition, .303 British for the Ross rifle and caliber 7.62 m.m. for the Russian rifle.

"Taking into account the issues and sales, together with the probable quality of re-loaded ammunition, it is safe to say that approximately 14,000,000 rounds of ammunition have been expended by civilian riflemen during the year."

At the request of Col. Brookhart, Maj. Glenn P. Wilhelm, Ordnance Department, told the directors of the work which the department has been engaged upon in connection with the semi-automatic shoulder rifle. He said that work of this nature had been engaging the attention of various governments for the past twenty years, especially abroad, but that the problem in the United States was rendered more difficult than that of other countries by the fact that our service cartridge is of unusually high power.

"There are now being completed at Springfield Armory" he said "twenty semi-automatic rifles of the Gerand pattern. These will be tested at Camp Benning and Fort Riley along with a like number of Thompson rifles. Both of these rifles weigh slightly more than the service arm, and depending upon the results of these tests either of these rifles or some other pattern may be adopted in the near future. There has also been designed and is undergoing development a third type of semi-automatic of 7mm. caliber."

"We hear often that the rifleman is obsolete: that future wars will be determined by the aeroplane and the gas bomb, but in my own opinion, the rifle in the next war will be of just as great importance as in the recent war. The aeroplane, the bomb and gas are going to be extremely useful, but their use is much like putting salt on a bird's tail. We had instances in the late war where aeroplanes were expected to take a fortified place, but in the end the task devolved upon the individual soldier armed with the rifle. And this was in Europe where large armies working on a limited terrain favored the use of aeroplanes and gas. I believe that the importance of the rifle as a weapon of war is being realized by the Ordnance Department more and more."

Present at the meeting were:

Major General F. L. Ainsworth, U. S. A. Ret.; Lt. Col. Smith W. Brookhart, of Iowa; Lt. Col. M. C. Muma, U. S. A.; Lt. Col. H. L. Cooper, U. S. A.; Lt. Col. W. H. Clopton, U. S. A.; Col. James A. Drain, O. R. C.; Col. C. E. Stodter, the Director of Civilian Marksmanship; Col. William Libbey, New Jersey; Col. Fred M. Waterbury, of New York; Lt. Col. Frank Maloney, of Tennessee; Lt. Col. A. B. Critchfield, of Ohio; Maj. John J. Dooley, U. S. M. C. R., of Maine; Maj. Townsend Whelen, U. S. A.; Maj. John de P. Douw, G. M. C., Md. N. G., representing the Adjutant General of Maryland; Capt. Karl D. Loos, Inf. O. R. C., of Illinois; Maj. K. K. V. Casey, of Delaware; Brig. Gen. F. H. Phillips, Jr., of Tennessee; Brig. Gen. Frank D. Henderson, the Adjutant General of Ohio; Maj. H. B. Van Sciver, representing the Adjutant General of Delaware; Brig. Gen. J. W. Hanson, the Adjutant General of Maine; James E. Murray, of New York; Lt. G. L. Wotkins, U. S. A., Springfield Armory, Mass.; John A. Betjeman, of Georgia; R. V. Reynolds, of the District of Columbia; Maj. W. A. McCain, U. S. A.; Maj. G. P. Wilhelm, Ord. Dept.; Brig. Gen. Kenzie W. Walker, U. S. A., Chief of Finance; A. Felix du Pont, of Delaware; Maj. Thomas E. Thrasher, U. S. M. C.; Maj. F. H. Gouaux, Q. M. C., Louisiana National Guard; Maj. Charles W. Savage, of Maine; Col. C. C. Hammond, of Oregon; Maj. Charles E. Gjedsted, of Oregon; Frank J. Kahrs, of New York City; Frank J. Boyne, of Wilmington, Del.; Frank Winch, of Wilmington, Del.; A. F. Porter, of Wilmington, Del.; Wallace H. Cox, of Wilmington, Del.; J. H. Squires, of Wilmington, Del.; Norman E. Horn, of New Haven, Conn.; Tom Davis, of New York City; Peter P. Carney, of New Haven, Conn.; C. S. Landis, of Wilmington, Del.; Capt. Henry N. Marsh, O. R. C., of Wilmington, Del.; L. C. Weldin, of Kenil, N. J.; R. F. Riggs, of East Alton, Ill.; Alfred B. Crossley, of Washington, D. C.; J. C. Gray, of Washington, D. C.; C. B. Lister, N. R. A.; Laurence Nusslein, of Washington, D. C.; Kendrick Scofield, of Washington, D. C.; R. H. McGarity, of Washington, D. C.; Capt. F. T. Chamberlin, M. C., U. S. A.; W. R. Stokes, of Washington, D. C.

Taming the Trigger Pull

(Concluded from Page 4)

The set triggers were as follows:

Housing No.	Description
992052	German Type used last year.
122356	U. S. M. C. Type developed by General Supply Depot, U. S. M. C., Philadelphia, Pennsylvania.
99254	Type developed by a member of the 1923 Infantry Team.
468441	Modification of the Infantry type.

The firing pins were as follows:

No.	Striker	Firing Pin Sleeve	Firing Pin Rod
1.	aluminum alloy with steel point	Steel	aluminum alloy
8.	aluminum alloy	aluminum alloy	aluminum alloy
2.	Steel	Steel	Steel
6.	Steel	Steel	Steel

2. Details of Test: The events in the course of the firing of the various actions will be defined as follows:

Event No.	Description
1.	Start of release or hair trigger.
2.	Start of Set Spring or (in case of Housing No. 992052) start of set trigger.
3.	Start of Firing Pin.
4.	Impact of Firing Pin on Primer.

Events number 1, 2, and 3 were registered on the oscillograph camera by the breaking of contacts, and event number 4 by the making of contact. The photographs show the various actions when in position for the measuring of the intervals between events numbers 2, 3, and 4.

3. Results: The measured intervals in thousandths of seconds between the events for the various actions are given in the table.

Theory. A rough theory for the motion of the firing pin may be given.

Let m be the effective mass of the firing pin, sleeve and striker plus one half the weight of the spring. Let f be the average force of the spring, and S the distance the pin moves. Then, by the ordinary formula for uniformly accelerated bodies, if t is the time.

$$S = \frac{ft^2}{2m} \quad \text{or} \quad t = \frac{\sqrt{2mS}}{f}$$

It follows from this that t may be reduced by decreasing m or S or both and increasing f .

In the case of firing pin No. 8 it was found that

$$m = 0.092 \text{ lbs.}$$

$$S = 0.025 \text{ ft.}$$

$$f = 18.75 \text{ lbs., or } 60.5 \text{ poundsals (fully compressed)}$$

Applying the formula, it is found that

$$t = \frac{\sqrt{2 \times 0.092 \times 0.025}}{60.5} \text{ equals } .0028 \text{ seconds.}$$

In view of the fact that the value of f used was a little too large because it was given for the fully compressed spring, the agreement is as good as could be expected with the experimentally determined value of .0031 in the best action.

Similar although more elaborated methods might be used in calculating the interval 2-3.

If the sear had not been effectively dislodged, and it was not, except in case of No. 122356, the interval would be much longer than that calculated, as is found to be the case.

Firing pin No. 8 is a little more rapid than firing pin No. 1, because the force of compression of the spring of the former is about seven per cent greater, while the masses of the pins are approximately equal.

4. Conclusions: As far as the interval 2-4, i. e. the interval between the release of the set spring or trigger and impact on the primer is that given by the set trigger in housing No. 122356 with firing pin No. 8.

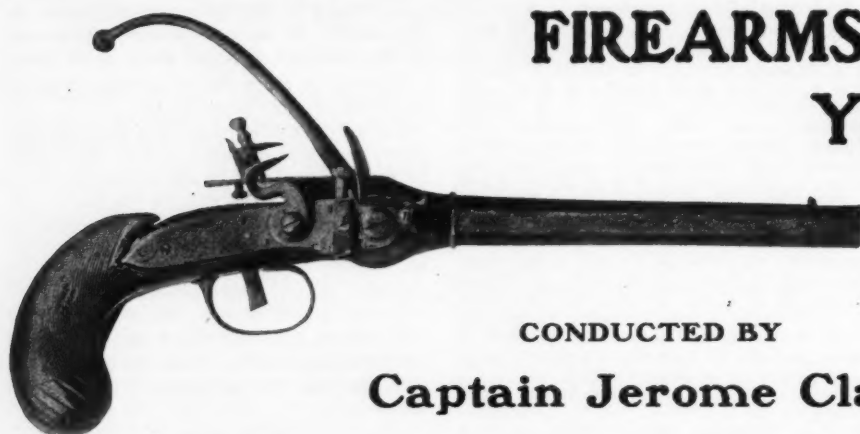
The results show that the interval 1-4 is variable, depending upon the setting of the release trigger and the pressure exerted upon it by the contact point.

It will be noticed that the interval 3-4 for the same firing pin differs for the various set triggers. This variation is attributed to the fact that all of the set triggers, except No. 122356, either invariably or frequently fail to give enough of a blow on the sear to prevent its interfering with the motion of the firing pin when once started.

It seems that the fastest set trigger No. 122356 requires a little too much pull on the release trigger. This could be reduced by modifying the contour of the toe of the set trigger.

By basing design on the rational basis outlined under "Theory," it is probable that considerable further reduction in the lock time could be effected.

R. H. KENT.



FIREARMS OF YESTERDAY

**A Department
For Collectors**

CONDUCTED BY

Captain Jerome Clark

The First Regulation Military Rifle

By Roy C. McHenry

IF YOU happen to go to England and should visit the Rotunda Museum of the Arsenal at Woolwich, you will see some mighty interesting firearms. They go clear back to the stone age (of bullets), and run from the tiniest pocket pistols to a monster of a cannon cast by the Turks in fourteen hundred and something, which has a bore diameter of twenty-five inches.

You might easily miss what I consider the most interesting piece in the whole collection, unless you care especially for wheel locks, and even then, you might pass over it in a hurry because there are lots of others there, some of them decorated all over with gold, silver and ivory flubdub, and every possible place on them covered with engraved hunting and battle scenes which look as if they had been perpetrated by a graduate of the Sunday Comic Supplement School of Art.

This gun has none of these adornments. Its stock is plain, made of the conventional black walnut, I judge, and its lock has nothing or it but the wheel and other "fixins" essential to the operation of the mechanism. Marked on it is an old-style Gothic letter "C" and the date 1611. If you go there, mind you take a good look at it in spite of its plainness, for it is an example of the earliest known military rifle introduced into any army.

The stock has the hollowed arc cut into the toe of the stock, common to most wheel locks, so that you could rest it on the top of, not against, your shoulder, thus eliminating the "ouch" coefficient from the recoil problem, even if you did have to hunt around for a rod or so behind you to find your gun after you had shot it.

The barrel is not quite thirty-six inches long, about the length of those of the 45-70 single-shot Springfields, that some of the National Guard outfits took along with them when they started out to free Cuba. Probably the weight is something like eleven or twelve pounds.

If you haven't spent all your loose change on the stuff that Mr. Volstead put the kibosh

on over here, you might get a catalog from the fine old soldier who runs the establishment, one Mr. George V. Guelph, for no matter how big a gun crank you are, they won't let you open the cases and take measurements and things. It isn't done, you know.

By reference to the catalog, then, you'll find that the subject of the investigation is a rifle, caliber .623, just a shade under the bore of a twenty-gauge shotgun, which was considered a child's size in those days. There are six grooves in the rifling, with one turn in forty-four inches, or about two-thirds of that of our Kentuckies.

Keeping on with the catalog, you'll learn that it is a Danish rifle, and that the letter C is the cipher of His Majesty Christian IV, last name Oldenburg, who went on the job in 1588, and continued to hold office until around 1630. Chris was by no means a cipher himself, and Denmark's stock was quoted high on the exchanges in those days. At the time he organized his rifle corps, he was getting ready for a row with a Bohemian gentleman named Wallenstein, who stage managed the Thirty Years' War for the Emperor of Austria.

Contrary to expectations, the rifle corps did not meet with the success that Daniel Morgan's did in the Revolution or Andrew Jackson's at the battle of New Orleans. It wasn't the fault of the men, for the Danes had a thousand years and more of fighting ancestry to fall back upon; or the rifles themselves, for although the wheel lock was not quite so quick or certain in action as the flintlocks, so far as perfection of workmanship goes, the seventeenth-century gunsmiths were not a great ways behind their successors of the eighteenth century, who produced the arm which was the deciding factor of our Revolution.

The Austrians and their allies had rifles, too, plenty of them, probably as good as the Danish ones, even if they were not of a standard-sized type, so the soldiers of King Christian possessed no great advantage over them. Neither side achieved any notable success by

reason of rifles, and the trouble lay with the ammunition and manner of loading.

The powder they had then was pretty punk stuff. They hadn't learned to granulate it well, and it was of nowhere near uniform strength, so that you couldn't depend upon one charge shooting where the preceding one had. They used to carry it in little paper or cloth cylinders, one charge to each, dangling from a shoulder belt, and that is where the term bandoleer originated. Later they put the bandoleers in the discard, and used the more sensible powder horn or cartridges in a leather box, where they were not so apt to be affected by moisture.

The main trouble with the rifles was in the bullets. These were made a trifle oversize. Every rifleman carried with him a short length of steel rod and a mallet. The rifles were funneled at the muzzle, just enough so that the ball would drop in and stick and then the rod and mallet were called into use to drive it into the bore. After a good deal of pounding, the bullet would be shoved down upon the powder, where it belonged, but it wasn't round any more, it was filled with dents and bulges, so that when it came out, its path was a zigzag one, not at all like what the ballisticians plot out on paper. Loading took a lot of time, too, and a smooth-bore musket had it all over a rifle of that period, in point of rapidity of fire. It was a hundred years before some inspired Pennsylvania gunsmith evolved the idea of shooting undersized bullets with lubricated leather or cloth patches.

King Christian's army was much smaller than that of Wallenstein's, and after a good deal of hard fighting Denmark lost Schleswig and Holstein, a territory about the size of one of our counties, so the poor king had to make peace on such terms as were offered him, which weren't very favorable.

It is interesting to note that after Christian drew out of the game, Gustavus Adolphus, of Sweden, took a hand, with the result that Wallenstein had to back up and leave all his winnings. The Swedish king gave him a final walloping at the battle of Lutzen, in which Gustavus himself was killed, but his understudies were able to carry on without him.

Because of this trimming Wallenstein lost the favor of the emperor, who was an ungrateful cuss after all his general had done for him, and Wallenstein had to retire to his castle at Eger. Three Irish officers named Butler, McDonald and Devereaux, who had joined his army for revenue only, got peeved at something he had done and organized themselves into sort of a Molly Maguire outfit. One night when everything was quiet, they sneaked into his apartment, each with a halberd, which is a species of meat ax. When they came out it didn't take a coroner's inquest to dope out what had happened to the deceased. The three of them had been rather messy about the job, but extremely efficient. The emperor handed them each an iron cross or something similar, instead of the rope that they deserved, for this bit of *schrecklichkeit*, but he never had another general who could take the place of Wallenstein.

Evidently the terms of peace imposed by Wallenstein upon King Christian didn't require him to turn over all his arms and other war munitions, or maybe he held out as the French say the Germans are doing with their stuff, for the museum catalog goes on to state that the Danish rifle is "one of a large number of precisely similar and uniform weapons preserved in the Arsenal at Copenhagen."

If ever I visit Denmark, I mean to cultivate the acquaintance of the watchman at the arsenal at Copenhagen, and if I can get him to leave his beat or look the other way for a minute or so, there is going to be a vacant space in the rack where those old wheel locks are kept. They certainly ought to be able to spare one. Don't spill this to the Danish authorities, though, fellows.

* * *

Misleading Circumstances and Their Effect Upon Firearm Collecting

BY "SMOOTHBORE"

NOT long ago I was reading an account of an American woman who, while traveling through Greece, picked up one of the ancient Grecian lamps of the foolish virgin type. Not being satisfied to just admire it for art's sake, when she arrived home undertook to see how it worked, and was badly burned. A friend, who thought she knew better how it worked, tried it, unbeknown to its owner and was burned worse. Thereupon the woman of the house had the man about the place take it out and bury it deep in the garden, determined that no one else would come to grief over it. That's all right as far as it goes, but as the eternal years roll on someone is going to find it, and will they be blamed much if they begin to suspect the aborigines of having a trace of classical Greek culture?

No more can the gun collector be blamed for some of his erroneous deductions. He is up against conditions about as bad. Turn to page 35 of your U. S. Cartridge Company's catalogue, item 166. Here is depicted a fowling piece of Revolutionary type—no mistake about that. The

catalogue says the lock is marked, "Allport, late with Ketland, London." Sawyer says, in his "Firearms in American History," that the London Ketlands are still a mystery. Why pick on them is more than I can tell. If it is so, it appears to be the collectors own fault, because there is no end of their work about, and they appear to be the Tiffany of their day in their line. Note Allport desires to trade on their name. Now it appears quite likely that the Ketlands, of London, were in business for many years before 1800, and after. Now, if this lock on No. 166 is the original, and the catalogue does not mention that it is not, Allport, lockmaker, had severed his connection before 1775. It is a question how long a man, desirous of making a name for himself, would care to trade on another's reputation. I should say not long.

Some four or five years ago, I took an old gun from one of the attics in town. In type it was a plains rifle, of the late flintlock period, or early percussion; as I study it—the flintlock period. The lock plate, I am certain, was flintlock, showing plainly where the pan had been—also screw holes for spring. The cock is not original; further evidence, the percussion lug screwed into the barrel is of early type, very large musket size, the wood right back of the lug is burned away as on flintlocks, from the flash in the pan, and the barrel near lug has that pitted appearance of the flintlock, but if a flintlock originally, it was of the late period, because the stock is of black walnut, varnished, and half-stocked, Swiss butt plate of iron, the trigger guard of iron has a spear, that I have been assured did not put in its appearance until 1850, it has a 30-in. octagon barrel—heavy, measuring one and one-sixteenth inch across. It has a rear elevating sight, .38 caliber exactly, and as far as I can determine, smooth bore—not rifled, and I'll make an affidavit it was not bored out for shot. The barrel is marked in small block type, opposite percussion lug, "Hitchcock and Muzzy." The lock is marked, "Allport, late with Ketland and Company." I'll make another affidavit, the lock is original to the stock, its fit is perfect.

I'll leave the collector to draw his own conclusions as to what has been done, but how much would I be blamed if, without knowing of item No. 166, I had said Allport to have been a lockmaker of period between 1840-1850. Now I am handing the collector my experience that I have been permitted by chance to find out, hoping that he, in turn, will take the trouble, and out of the goodness of his heart, hand the despairing gun collector his own accidental findings. And while you have your U. S. Cartridge Company's catalogue out, please note cataloguer's introductory remark—he believes his catalogue to be nearly correct. Turn to page 17, where he makes a spread of the John Cookson gun made in 1586; then turn to page 217 of "Firearms in American History," and note under "Firearms' makers," John Cookson, Boston, 1727; and ask yourself if there is any connection. Now turn to item 163, a French Charleville, caliber .75, the French Government specifications call for .69-70 caliber, but here is something for Mr. Collector to remember. I find it so, and I have it from a very good authority, that most of these old guns actually measure .75, whether from the continued use of

the iron ramrod acting as a file on the bore near the muzzle, or the expansion caused by many heavy charges, or both; so that if your old French musket measures a trifle more than .70, don't misunderstand the matter, and attribute your gun to a "mixed breed of cats." Now turn to item 361. All I can say of this is that it is too bad to have included it as a Charleville. But we will have to agree with him that, as a whole, it is a wonderful collection, and offers the collector more good points for observation than bad ones. The one thing I observe about this collection that gives me food for reflection is the many plains rifles—Indian rifles and others—made around 1840-1865, and not a single specimen of the Hawkins. True, perhaps, Hawkins was not a contractor for Indian rifles; but, also true, that they (the Indians) did not care who they stole a rifle from.

Here is hoping that with the aid of THE AMERICAN RIFLEMAN as a medium, we can figure out some of these puzzling problems.

* * *

Musket Notes

BY FRANCIS W. BREUIL

The publication of Major Foster's interesting discussion on U. S. muskets has brought from Mr. Francis W. Breuil, a firearms collector of standing, some further information on the subject. In connection with the publication of this addenda, the editors wish to take the opportunity to express their desire for more manuscripts of a constructive nature. It is difficult if not impossible for any one collector to completely exhaust a subject and it is only by drawing from many sources that the full facts are finally established.

THE EDITORS.

REFERRING to Major Foster's very interesting notes on U. S. smooth-bore muskets, there seems to be an error in regard to the musket Model 1840. Major Foster states the so-called model of 1840 was simply a Model 1822, converted to percussion, and then rifled for the Minie bullet. But there was an entirely new model of a flint lock musket that came between the flintlock musket of 1822 and the percussion musket of 1842. And it was known as the Model of 1840. Whether this is correct I do not know, but the muskets exist. The flintlock musket, Model 1840 (?), is caliber .69, smooth-bore, 42-inch barrel, 18-inch bayonet. The shape of stock, all mountings and ramrod are identical with those of the percussion musket Model 1842. In fact, bands, guard, butt plate screws, etc., are interchangeable with Model 1842.

To describe the lock of the Model 1840: The plate is 6½ inches long, while the lock plate of Model 1822 is 6¼ inches long, and that of the musket Model 1842 is 6¼ inches long. The rear of the lock plate Model 1840 is pointed like that of 1822. The other differences in the 1840 lock are as follows: The opening in the cock that gives clearance to the screw of the flint clamp or cap is a perfectly round hole one-half inch in diameter, instead of the bent-shaped opening used in former models. The brass pin lies flat, horizontal to the bore and not inclined, as it is in the Model 1822. The hammer or frizzen is 1½ inches wide instead of one inch, and the lock is a plain curve both ways. The hammer or

frizzen spring encircles the forward side pin of the lock as it did in the muskets prior to the Model 1822, which is also the case with the pan.

The writer has before him one of the model locks from which this musket was made. I took it from a pile of scrap gun parts in the Benecia Arsenal in 1907. It is marked, "Harpers Ferry 1835 U. S." and spread eagle. All parts are marked, "U. S. M." with the exception of the sear spring and screws, which are marked simply with the letter "M". The workmanship is of the best. But note the date—five years too soon for 1840. In addition to this model flintlock, there are present three complete muskets, Model 1840 (?) as follows:

No. 1. Springfield 1841. Altered from flint to percussion, vent plugged. Cone screwed in upper right quarter of barrel, brass pan sawed off and filled. Holes for hammer and frizzen screw and frizzen spring screws and pin plugged.

No. 2. D. Nippes, U. S. Mill Creek, Pa. 1841. Altered from flint to percussion, pan sawed off flush with plate, milled out to take long drum cone, and screwed to lock plate is the tape priming device of Edward Maynard, Pat. Sept. 1845. Note: A duplicate of this musket is illustrated in the catalogue of the United States Cartridge Company collection No. 185. Described as Model 1842, (but look at lock plate point).

No. 3. D. Nippes, U. S. Mill Creek, Pa., 1844. Flintlock corresponds exactly with the model lock marked, "Harper's Ferry 1835".

All three muskets are of the same pattern, cal. .69, smooth-bore, 42-inch barrel. Alongside of them are two of the percussion muskets, Model 1842, one smooth bore, the other rifled, and with rear sight as described in the Ordnance Department publication, "Small Arms, 1856."

It would seem a long time from the making of the model lock in 1835 to the appearance of the arms themselves called "Model 1840." The writer has never found a musket of this pattern dated 1840. All that I have seen, which might be a dozen or more, were dated 1841 or later, and D. Nippes, as far as the writer knows, seems to have been the only contractor. We have muskets of his make dated 1841 and 1844, and I am inclined to think they go to a later date. Surely they were not made at Springfield after the year 1841, as it seems to be an established fact the percussion musket was started in 1842, and the flintlock discontinued in the national armories. Muskets, like all firearms of the past, are apparently subject to errors, not only in their shooting, but in their history, and historical descriptions. The Ordnance Manual, 4th edition, published in 1865, illustrates a percussion musket which is marked, "Musket Model 1841." On page 177, in the list of small arms it is "The Rifle Musket Model 1842." Further on, we are referred to the Ordnance Manual of 1850, and are told it differs from the original model in so much as the bore is grooved, and it is supplied with a rear sight similar to the new musket (1855). All of the U. S. rifle muskets, caliber .69, were converted smooth bores, either Model 1822 or Model 1842, barring the Plymouth Rifle, caliber .69, made at Whitneyville. During the Civil War, Justice Muskets, caliber .69, were made up from old flint barrels and locks altered, with new mountings and stocks.

Firearms Faking—And A Real Cominazzo

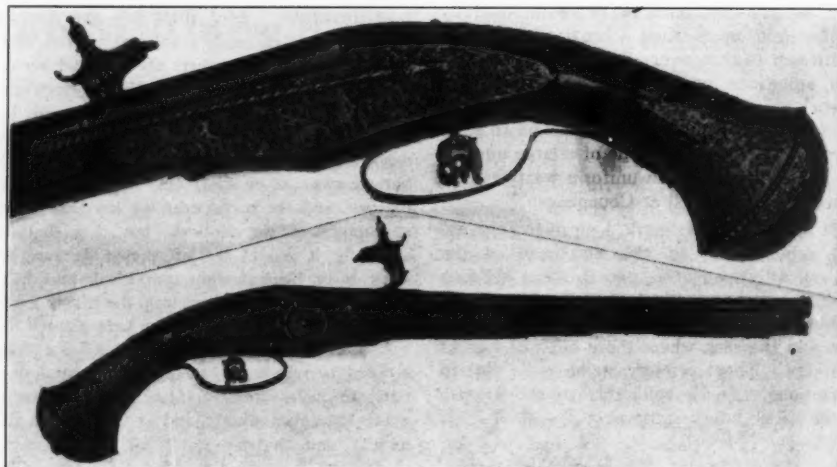
THE presence, in a celebrated museum, of several handsome pistols with beautifully heat-blued barrels, and in large gold letters almost covering the top of the barrel, the legend "LAZARO COMINAZZO," brings up the question—"How long has faking endured as a fine art?" The connection between these museum exhibits and the counterfeiting of fine arms lies in this fact—the pistols clearly are of the period 1750-1790, and Cominazzo died about 1660.

The collector of early American firearms is much less likely to encounter the work of the faker than is the collector who specializes on the weapons of early European or Oriental origin. There are those sufficiently unscrupulous to have

instance, only the mechanism and decoration and not the maker's name was copied.

It may be assumed that the art of firearms counterfeiting—and, in many instances, it proved to be an art—persisted until the appearance of the firearms collector. Then the labors of the counterfeitor were directed toward the end of deceiving the collector.

Some idea of the antiquity of the firearms faker may be gained from a paragraph in "An Essay on Shooting," published in London, in 1791. In this book, which, by the way, is now extremely rare, the author cautions the collectors of his day against permitting themselves to be misled into purchasing spurious Cominazzos. He says:



The Cominazzo recently sold in London, conceded to be the work of this master. It bears no name, while later imitations are signed in box-car gold letters

attempted to palm off on the inexperienced camouflaged examples purporting to be rare specimens of early date. These, however, are fortunately few and far between, and are relatively easy to detect by collectors familiar with their subject. The European weapon, however, is another thing. Just when or how the first counterfeit of European arms came into being is shrouded in the mists of the past. It is probable, however, that this practice had its inception long before there were firearms collectors, and with a far different purpose than that which actuates the faker today. In those past times, firearms were counterfeited and stamped with the name of some celebrated maker for the same reason that actuates the Spanish arms factories today in making their products closely conform in caliber, mechanism and appearance to the products of well known American manufacturers. In short, these subtleties were for the purpose of deceiving the purchaser and by making him believe he was acquiring a weapon of high standard.

While the famous Cookson Gun, about which we hope to have much more to say at a later date, cannot be considered an actual forgery, since the man who made it marked it, yet experienced collectors are convinced it was copied from a much earlier maker, an Italian. In this

"The barrels of both guns and pistols by this maker [Cominazzo] were celebrated throughout Europe. He did not forge the barrels himself, but finished them with great accuracy, and ornamented both barrels and stocks in the richest manner. At that time, however, when these barrels were in such high estimation, there were numerous counterfeits bearing the name and mark of Cominazzo; and it then required a perfect acquaintance with the genuine barrels not to be deceived by the spurious ones. The true pieces are now found only in museums."

This being true more than a century ago, what ground has a collector today for believing that Cominazzos are obtainable in any such numbers as they appear in some exhibits?

Recently, in London, however, a real Cominazzo appeared. It was as much like the usual counterfeit as an old musket is like a Purdy fowling piece. Once a genuine Cominazzo has been examined there is little chance of palming off a counterfeit in its place.

This pistol was the property of Mr. Herbert F. Jackson, author of "European Hand Firearms," and was sold at auction in the last arms sale of Sotheby, Wilkinson & Hodges, at 35 New Bond Street, London, March 1, 1923, for one hundred and sixty pounds sterling.

J. C.



Conducted by **C.B. Lister**

SPEAKING OF NATIONAL MATCHES

OUR pride received a serious jolt the other night when we read a dispatch from Berne, Switzerland, to the effect that the Swiss National Matches would open this year with forty-two thousand entries. This will be the biggest year ever enjoyed by the Swiss riflemen, there being but thirty-three thousand entries in the last National Matches.

Of course, we have all known that "America—A Nation of Riflemen" exists as such only in the minds of wielders of the pen, but,—set Switzerland and its entire population down somewhere in the United States and try to find it; then set the National Rifle Matches at Camp Perry down beside the Swiss National Matches with forty-two thousand competitors, and try to find our matches!

* * *

PIQUA, OHIO, TO HAVE NEW GALLERY

The rifle club at Piqua, Ohio, which includes in its membership a number of riflemen who are well known nationally because of their performance at Camp Perry and in the N. R. A. Gallery and Small Bore Competitions, has attacked the problem of suitable range facilities from the right angle. They have gotten together with the city fathers and arranged for the use of space in one of the fire department buildings. Not only will the Piqua riflemen now have warm, comfortable gallery facilities, but the Director of Public Safety will be familiar with their work, police officers and firemen will have an opportunity to become better acquainted with their weapons, and the possibility of anti-firearms legislation in Piqua is reduced just so much.

* * *

SOMETHING TO BEAR IN MIND

Out in Bellingham, Washington, the first meeting of the Bellingham Rifle Club was a huge success, and the report of the officers indicates that a very wise plan has been adopted. Five range officers were appointed to assist the executive officers. This will assure one or more men always at the range with authority to take charge of the firing line. No rifleman interested enough to join a rifle club wants to give up his shooting entirely. But the executive officer, if he is to properly control the firing line, cannot shoot. In justice to him, range officers should be appointed in sufficient number so that all ranges can be properly supervised, and that everyone will have an opportunity to shoot. This is a plan that has already been adopted in many clubs, but there may be some who, adhering strictly to the letter of the by-laws, have failed to provide proper assistance for the man who, next to the secretary, has the biggest job of the club on his hands.

CIVILIANS AND GUARDSMEN GET TOGETHER IN NASHVILLE

THE last paragraph of the newspaper clipping which follows is of particular interest:

RIFLE CLUB TAKES FIRST SHOOT FROM GUARDSMEN

By a margin of 268 "bull's eyes," the Nashville Rifle Club triumphed over the National Guard Thursday night at the local armory in the first engagement of a three-position marksmanship contest.

Marksmanship from two positions, prone and sitting, was tested Thursday night. The third position, kneeling, will be shot next Thursday night at the same place. The public is invited. Honors for prone shooting, Thursday night went to the National Guard by a margin of 11, but this lead was overcome in the second position, sitting, by the Nashville Rifle Club which hung up a score of 822 to 543 out of a possible 1,000.

J. H. Brandon, of the rifle club, took first place for individual marksmanship in both positions. His tally out of a possible 100 was 99 in the prone position, and 90 in the sitting. Approximately 100 spectators, many of them women, witnessed the opening bout between the National Guard and the rifle club.

In connection with this incident, it is of particular interest to note that the range facilities in the armory have been doubled as a result of the co-operation of the civilians and National Guardsmen, while the civilian club has graduated from a basement range into comfortable quarters at the armory, and a great many citizens of Nashville are interested in the activities of both the civilian club and riflemen of the Guard. You cannot go wrong in co-operating with the National Guardsmen and police officials of your community.

* * *

HOW THEY DO IT IN BUTTE

IN THE Butte, Montana, Club, they have a system of seasonal medal matches which they report as very satisfactory and superior to the various handicap schemes which have been tried out. The system as follows has much to commend it from the standpoint of getting out the maximum number of members every week. The seasonal shoot runs for twelve weeks. Ten scores count for the medals. The shooting in this particular instance is done at 200 yards offhand, but the same can be adapted to any range and any position. In Butte, the following scoring system is followed:—

Ten scores of 42, total 420, bronze medal.

Five scores of 42, five scores of 43, total 425, additional bronze bar.

Ten scores of 45, total 450, silver medal.

Five scores of 45, five scores of 46, total 455, additional silver bar.

Five scores of 47, five scores of 48, gold medal.

Ten scores of 48, additional gold bar.

If a shooter turns in a score of 47 and then a 49, he is credited with two 48's. A squadding charge of seventy-five cents is made each week. Twenty-five cents of this entitles the shooter to

five medal scores. If he wishes to shoot additional medal scores that week, he pays five cents per score. A shooter may scratch a score and start a new one at any time.

In addition, some club member each year donates a prize to go to the man making the highest total for two record strings, these prizes being open only to men who have never won a similar prize before. This year a .22 Colt Automatic or Revolver may be selected by the winner of this special prize.

This system, in addition to providing splendid incentive for all club members to get out and shoot every week, undoubtedly helps the club treasury materially, and provides the training under competitive conditions which is so necessary to the development of a successful team.

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THE MANITO PISTOL AND RIFLE CLUB SETTING STAGE TO SELL RIFLE SHOOTING TO SPOKANE

The two paragraphs following have been lifted from a letter from Mr. Roy R. Gill, of the Manito Pistol and Rifle Club:

"We have a very fine outdoor range for Government rifle shooting up to eight hundred yards. We have a small house at two hundred yards range, where we hold our Sunday "Shoot." This building isn't large enough, it being sixteen feet wide by twenty-eight feet long, and we are now enlarging it to make it forty-two feet long by sixteen wide; are going to put in a big stone fireplace with a good double floor, also concrete where the shooter would stand. Will arrange for .22-caliber rifle shooting at the proper ranges, both prone and offhand. We have now three targets at the two-hundred-yard range, and will put in two more, making five, and our building will then accommodate ten shooters at one time, with five targets. Also on the other end of the building, will have the .22-caliber range, so that five .22 shooters can shoot at the same time, and will put in the trolley target carriers for the .22 shooting.

"We now have a membership of about thirty, but as soon as we get our building remodeled, painted, and fixed up, we are going to put on a campaign for membership, and probably will have at least two or three hundred. We encourage young boys and men to learn how to shoot."

The rifle shooting game is badly in need of clubs equipped with comfortable shooting ranges and clubhouses. It is a dead certainty that the time and money spent in installing their new plant will be returned with dividends to the Manito Club in the form of increased membership and attendance at the shoots.

Incidentally, the club letterhead bears the following slogan in good size type across the bottom: "The Livest Shoot Club in the Northwest." Every time a club officer uses this letterhead, he is bound to put a little additional pep into his letter. Every time a club member receives a communication on this letterhead he is going to take a little additional pride in his organization. And every time an outsider receives a letter on this letterhead, he is favorably impressed and pays a little more attention than he might otherwise.

"The Livest Shoot Club in the Northwest" is some reputation to live up to, but from the plans which have been outlined, the Manito Pistol and Rifle Club seems to be well on its way to justification of its claim.

THE BEST EQUIPPED RIFLE CLUB IN THE UNITED STATES

As a result of a recent consolidation of the Los Angeles Rifle and Revolver Club with the Encino Country Club, the Los Angeles shooters have what we believe can be safely claimed as the best equipped club in the United States if not in the world. The Encino Country Club, with which the Los Angeles Club has incorporated, embraces 1820 acres of "meadows, hill-sides, canyons, and mountains." It is ten miles from Hollywood, and wholly within the city limits of Los Angeles. The club-house now being completed follows the Spanish style of architecture so popular and so well adapted to Southern California. The grounds include an outdoor swimming pool, lake for boating, golf course, tennis courts, and all the usual country club attractions. An unusual feature is the provision for the leasing of small plots in various parts of the reservation to members of the club for the erection of private lodges.

The ranges will have targets from two hundred to twelve hundred yards.

The rifle shooting game has needed clubs of this nature very badly, in order to give it the prestige which it should enjoy with sportsmen of the more wealthy classes. The Los Angeles Rifle and Revolver Club is to be most heartily congratulated on its new arrangements, and the Encino Club deserves the thanks of every American interested in the gospel of straight shooting, for the splendid support it is giving the game in providing an up-to-date range in connection with its other splendid facilities.

How many other active rifle clubs, we wonder, might profitably make similar arrangements with newly organized or already established country clubs in their locality?

* * *

WATCH THE ENGINEERS

The serious attention which the Corps of Engineers is giving the National Matches is well announced in the careful program of elimination competitions worked out by the Second Engineers of Fort Sam Houston. The plan adopted provides for weekly company competitions between teams of four from each company, to be fired on the post 200 yard range Thursday afternoon. The two low competitors on each team will not be selected to represent their company for the following two competitions. Once a month the twenty high competitors in the weekly matches will be sent to the Camp Bullis range for long range practice. This program will be followed by the tryouts for the Engineer Team in June, and it is to be anticipated that by that time the Commanding Officer of the 2nd Engineers will have an excellent basis for the selection of the squad which will represent his regiment in the team tryouts.

* * *

MANHATTAN, KANSAS TO HAVE NEW RANGE

Mr. P. A. Shepherd, Secretary of the Manhattan, Kansas, Rifle and Revolver Club, tells us that the club has secured a new indoor range site, which is rapidly being made over into a first-class gallery, permitting the use of a .22 rifle and any caliber revolver or pistol.

The Manhattan Police Department has been adopted by the club, and some excellent shots are being developed among the officers. This Club is looking for pistol matches either with the handgun or rifle. The address of the Secretary is Box 393, K. S. A. C., Manhattan, Kan.

* * *

ANOTHER INTERNATIONAL FOE WORTHY OF OUR STEEL

In discussing the possibilities for the participation of a British Team in the Olympic International Free Rifle Matches, the British N. R. A. Journal makes the following editorial remarks:

"In the personal opinion of your Editor, who has had a recent experience of shooting in Continental conditions, the regulations of the Olympic matches contain nothing that should present any great difficulty to a British Team.

"Should a British Team be entered, our chief difficulty would be in the provision of a rifle worthy to rank, as a target weapon, with the magnificent arms with which the United States team, and some of the Continental teams will be armed.

"Armed with such a rifle, and provided with ammunition of the K 23 brand, there should be a very stiff fight between the British, the United States, and the Swiss teams for premier honors. The United States will be hard to beat because they have the whole resources of their Ordnance Department behind them; but it should not be impossible to beat them. Your Editor feels sure that he is not the only member of our Association who would be very glad if we could 'have a smack at them.'

The British riflemen have always furnished us our most interesting, most spirited, and most friendly competitions, and it is a surety that the riflemen of this country would welcome the return of the British teams to the International competition field. We will be mighty glad to have them take a smack at us, and with the ever-increasing interest in the rifle shooting game that is being evidenced in the United States, we will feel fairly confident of our ability to retain the Palma Trophy, the Argentine Cup, and the Dewar Trophy.

* * *

WHEN YOU ENLARGE THE RANGE IN THE SUMMER

The following extracts from a letter received from Mr. H. F. Van Winkle, Secretary of the Santa Barbara Rifle Club, will be of interest to all club secretaries who are planning on range improvements in the Spring:

"When we built this range we were mighty short of funds, and the way in which the boys put down a five or ten, or failing that, turned out to help with pick shovel or hammer and saw, while those who could better afford the cash outlay came through with larger amounts and helped work besides, was an inspiration to the officer of the club.

"We found that Italian day labor even at four dollars a day with a good club man to act as foreman, got better results, however, when it came to digging in the clay and rock in the lower half of the pits, and did not dampen the enthusiasm of the members either."

When you are ready to start work on the range, it is a good idea to lay a definite assessment on each member, which can either be

worked out or paid out. You can fix the rate at what the traffic will bear. And there is much wisdom in Mr. Van Winkle's statement that paid labor with a good foreman in charge is probably the most economical for the heavy work to which club members are not accustomed. Your range will probably be ready for use several weeks earlier with hired labor on the job, and you will gain just that much in enthusiasm, entrance fees, and squadding charges.

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MORAINE CLUB ADOPTS NEW HANDICAP SYSTEM

The Moraine Rifle Club Association, made up of employees of the General Motors Research Corporation, Dayton, Ohio, is following a plan for club matches which seems to meet the much desired need for matches encouraging the shooter of average ability, and at the same time giving the good shot a chance to win something without an impossible handicap. The system is applied to the club's weekly matches. A definite average, based on previous performance, is established for each rifleman at the beginning of the season. This average is registered on the first of each month. Medals are awarded on the percentage of gain over the shooter's average. Considering 100 as the possible score and deducting the shooter's average gives the figure on which the percentage is based. That is, a rifleman whose average is 96 and who makes a score of 98, is credited with a fifty per cent increase. In other words, 96 being his average, deducted from 100 leaves 4. 98 is two points higher than his average; two points divided into four gives fifty per cent. Similarly, a shooter whose average was 70 would have to make an 85 in order to be given credit for a fifty per cent gain. Take 70, the average, from 100, and you have thirty points. Fifty per cent of thirty points is fifteen points. 70 plus 15 gives you the 85 mentioned.

Mr. Charles R. Short, President of the Moraine Club, reports that the system has been tried out in several contests and is giving satisfaction to all concerned. This is the first handicap system we have ever heard of that gave satisfaction to all concerned.

The membership of the Moraine Club is divided into three groups as follows: Group A, 90 to 100 per cent; Group B, 80 to 89 per cent; Group C, 79 per cent and less. A gold medal is awarded each month to the member in class A showing the highest percentage of gain over his previous month's score. Group B gets a silver medal, and Group C, a bronze medal. The member winning the medal the greatest number of times during the year keeps it permanently. The permanent scoreboard shows the name of each member, his standing, and the group in which he will shoot. This system enables members to watch their progress throughout the year and proves a valuable incentive to regular attendance and constant improvement.

Most clubs are in search of some scheme as this, in order to stimulate the average shots and keep the good shots enthused. If you cannot quite figure it out from the above, write direct to Mr. Short, care General Motors Research Corporation, Dayton, Ohio, and he will be glad to explain the Moraine plan in greater detail.

Gallery Matches In Full Swing of Mid-Season Activities

IF ANY one rifleman is to be selected as the outstanding figure of the Gallery Program so far this year, it is C. G. Harrel, of the University of Chicago. Harrel, after winning two of the position matches including the prone championship with the remarkable performance of forty X's in the shoot-off, won the 75-foot Gallery Championship, with a score of 597. No more eloquent tribute can be paid the manufacturers of .22-caliber long rifle ammunition and rifles than the improved standard of scoring which has been evident throughout the gallery matches this year. Scores which a few seasons ago were winning matches are now among the "also rans."

Upon the completion of Match No. 10, it was found that there were 9 competitors tied for first place with a score of 400, and 11 competitors tied for ninth place with one point down. The only manner in which these places could be decided was to hold a shoot off, so targets were sent to these competitors. The Match was won by C. G. Harrel, of the University of Chicago, with another possible in the shoot off, hitting within the X ring 40 times. Mr. Harrel was armed with a Stevens 414 rifle equipped with a Winchester 5-A scope. He used Winchester Precision 75 ammunition. Second place in this match was won by R. H. McGarrity, of Washington, D. C., the National Small-Bore Champion for 1923. He was equipped with a Winchester .52 with a Winchester 5-A scope that had been re-vamped by Fecker of Cleveland. McGarrity used Remington Palma ammunition. F. E. Border of West Bend, Iowa took third place with a possible score in the shoot off and 33 X's. Mr. Border used a Ballard action, Peterson barrel rifle equipped with a Winchester 5-A scope and used Peters tackhole ammunition.

The Military Company Team Match proved to be hotly contested. At the closing of this Match it was found that Company A, 121st Engineers, D. C. N. G. was in the lead with an aggregate score of 3584, leading team No. 1 of Company B, 17th Infantry by 20 points. The team was composed of J. W. Crockett, M. Dinwiddie, L. Meeds, H. W. Wells, and H. Melwit. It is interesting to note that all five members of this team are young men just starting into the rifle game. They are, or have been members of the Central High School rifle team of Washington, D. C. This team has been developed under Gunnery Sergeant Ollie Shriver, a veteran of several national and international teams. Second place in this match was won by Team No. 1, Company B, 17th Infantry of the regular army, under the leadership of Sergeant P. F. Mollerstrom, who has been a member of the United States Infantry Team for several years. Sergeant Mollerstrom's team won the Military Company Team Match in 1923, and led in this years' competition until the latter half of the third stage, at which time two members of the team failed to make average scores in the standing position. The National Guard has long been recognized as the school for the development of rifle shots, and therefore, it

(Continued on following page)

RESULTS OF MATCH NO. 7

(Individual, Kneeling, 50 Feet)

Place	Name	Address	Score	Rifle	Ammunition
1.	Curtis Liston	Johnstown, Penna.	397	B. S. A.	Winchester 75
2.	Norbert Ribble	Iowa City, Iowa	395	No record	No record
3.	W. R. Stokes	Washington, D. C.	393	Pet.-Ballard	U. M. C.
4.	William L. Bruce	Cheyenne, Wyo.	391	Pet.-Ballard	U. M. C.
5.	Dr. E. B. Loofboro	Janesville, Wis.	387	Winchester 52	Precision 75
6.	Irvin L. Murray	New York City, N. Y.	385	Winchester 52	Precision 75
7.	Lt. S. R. Hinds	Fort Snelling, Minn.	384	Springfield	U. S. N. R. A.
8.	Richard W. Carlisle	New York City	373	Winchester 52	Precision 75
9.	James C. Greenway	Walla Walla, Wash.	370	Winch. 66784	Remington
10.	G. H. Woodworth	Troy, Penna.	370	Stevens 414	Palma
11.	Frank A. Williams	Dayton, Ohio	369	Winchester 52	Precision 200
12.	C. D. Wild	Janesville, Iowa	362	Springfield	Winchester
13.	Dr. R. J. Hart	Janesville, Wis.	362	Winchester 52	Precision 75
14.	Dr. D. B. Wylie	Salinas, Calif.	361	Winchester 52	Precision 75
15.	Wm. M. Affelder, Jr.	New York City	359	Winchester 52	U. S. N. R. A.
16.	Lewis C. Sherman	Columbus, Ohio	356	Springfield	U. S. N. R. A.
17.	E. W. Pape	New Britain, Conn.	346	No record	No record
18.	William Upton	Newport News, Va.	342	Savage 20404	Winchester 75
19.	William E. Elcock	Newport News, Va.	339	Savage 20942	Winchester 200
20.	Chas. C. Berkeley	Newport News, Va.	318	Stevens 414	Peters
21.	William Weston	New York City	300	Savage 20530	U. S. N. R. A.
22.	H. W. Conklin	Canutillo, Texas	216	Winchester	Western
23.	Albert Spence	Brooklyn, N. Y.	98	Savage 20530	U. S. N. R. A.

RESULTS OF MATCH NO. 8

(Individual, Kneeling, 75 Feet)

Place	Name	Address	Score	Rifle	Ammunition
1.	C. G. Harrel	Chicago, Illinois	398	Stevens 77989	Precision 75
2.	F. E. Border	West Bend, Iowa	393	Pet.-Ballard	Peters Tack-Hole
3.	Harry E. Brill	Tulsa, Okla.	392	Winchester 52	Peters Tack-Hole
4.	T. K. Lee	Birmingham, Ala.	390	Winchester 52	Peters Tack-Hole
5.	A. C. Van der Bent	Philadelphia, Pa.	386	Winchester 52	Palma
6.	J. A. Wade	Sheridan, Wyo.	386	Winchester 52	Peters Tack-Hole
7.	A. J. Huebner	Chicago, Ill.	383	Winchester 52	Winchester
8.	O. H. Maberry	West Bend, Iowa	383	Pt.-Ballard	Peters Tack-Hole
9.	R. C. Stokes	Washington, D. C.	382	Pet.-Ballard	Palma
10.	L. W. Somers	Bangor, Maine	382	Stevens 414	Peters Tack-Hole
11.	H. O. Waters	Salt Lake City, Utah	382	Winchester 52	Palma
12.	Geo. L. Cutting	Worcester, Mass.	381	B. S. A. 12	Precision 75
13.	Edwin N. Moor, Jr.	San Francisco, Cal	380	Stevens 414	Palma
14.	Pearl T. Clapp	Brattleboro, Vt.	379	Stevens 414	Palma
15.	F. C. Kimmel	St. Louis, Mo.	379	Winchester 1567	Peters Tack-Hole
16.	Ralph H. McGarrity	Washington, D. C.	378	Winchester 52	Palma
17.	Max R. Boggs	Cristobal, Canal Zone	374	Stevens 414	Palma
18.	Edward Montag	West Bend, Iowa	374	Pet.-Ballard	Peters Tack-Hole
19.	Roger M. Kelley	Pasadena, Calif.	373	Springfield 699	Palma
20.	Col. C. E. Stodter	Washington, D. C.	373	Winchester-Pope	U. S. N. R. A.
21.	A. K. Friedrich	Ames, Iowa	373	Winchester 52	Peters Tack-Hole
22.	Frank Hogan	Salt Lake City, Utah	372	Stevens 414	Palma
23.	Robert T. Markle	Harlowton, Mont.	371	Winchester 52	Precision 75
24.	H. A. Weyomuth	Salt Lake City, Utah	369	Stevens 414	Palma
25.	A. B. Jordan	Brattleboro, Vt.	367	No record	No record
26.	M. C. Frincke, Jr.	Berkeley, Calif.	366	Winchester 52	Palma
27.	A. B. Sprague	Worcester, Mass.	365	Stevens 75793	Precision 75
28.	Nick Kipp	Rosebud, Mont.	365	Springfield 1414	Peters Tack-Hole
29.	F. C. Payne	Los Angeles, Calif.	361	Stevens 3552	U. S. N. R. A.
30.	S. D. Monahan	Chicago, Ill.	356	Winchester 3056	Palma
31.	Jesse O. Norcross	Shrewsbury, Mass.	351	Winchester 52	Precision 75
32.	Fred Johansen	Joliet, Ill.	349	Winchester 52	U. S. N. R. A.
33.	George Scott	Audubon, N. J.	346	Stevens 414	U. S. N. R. A.
34.	J. V. McKelvey	Ames, Iowa	346	Winchester 52	Winchester 200
35.	W. S. Gibbons	Boston, Mass.	334	No record	No record
36.	W. L. Darling	Boston, Mass.	329	Springfield 302	U. S. N. R. A.

RESULTS OF MATCH NO. 9 AND SHOOT OFF

(Individual, Prone, 50 Feet)

Place	Name	Address	Score	Rifle	Ammunition
1.	A. M. Reynolds	Schenectady, N. Y.	400-400-34x	Stevens 414	Win. Prec. 200
2.	Irvin L. Murray	New York City	400-399-32x	Winchester 52	Win. Prec. 200
3.	Curtis Liston	Johnstown, Penna.	400-397-1-8	B. S. A. 12	Peters
4.	W. R. Stokes	Washington, D. C.	399-400-34x	Pet.-Ballard	Palma
5.	J. S. Dickson	Sheridan, Wyo.	399-399-35x	Winchester 52	Pet. Tack-Hole
6.	Allyn A. Tidball	Milwaukee, Wis.	399-397-25x	Win. 111404	U. S. N. R. A.
7.	L. D. Vaughn	Thermopolis, Wyo.	399-394-25x	No record	No record
8.	W. F. Jacobs	Harlowton, Mont.	399-No r'p't	Spring. 22	Palma
9.	H. K. Mann	Fort Slocum, N. Y.	398-400-33x	Spring. 325	U. S. N. R. A.
10.	E. A. McGoldrick	Spokane, Wash.	398-399-33x	Spring. 1326	Palma
11.	Dr. M. E. McManes	Piqua, Ohio	398-398-30x	Winchester 52	Peters T. H.
12.	C. C. Cheshire	Nogales, Arizona	398-394-27x	Winchester 52	U. S. N. R. A.

(Continued on following page)

was not at all unexpected that two National Guard teams found places among the three high teams in this Match. Troop A, 113th Cavalry, Iowa National Guard won third place with an aggregate score of 3534.

Match No. 7 was won by Curtis Liston of Johnstown, Pennsylvania. Liston's name is familiar among the high scores of the bulletins published with the results of the indoor matches. His equipment was a B. S. A. rifle, and he used Winchester Precision 75 ammunition. In Match No. 9 Mr. Liston placed third, using the same type of rifle and using Peters tuckhole ammunition. A. M. Reynolds of Schenectady, New York won Match No. 9 with a score of 400-400 with '34 X's. A Stevens 414 rifle was used with Winchester Precision 200. Irvin L. Murray took second place with a score of 400-399 with 32 X's. Murray favored the Winchester 52, Winchester scope, and Winchester Precision ammunition.

The standard N. R. A. Gallery targets were changed so as to include an X ring in order to eliminate the many ties and long runs of possibles that have occurred in the past. The target was not ready for distribution until after the present gallery season was well under way. The competitors welcomed this change. This target seems to put the competitions on a higher plane, for with the development of the rifle and ammunition to its present high state of accuracy it was found that it was necessary to lay more stress on holding and squeezing in order to improve the matches.

Pistol Match No. 1 was won with a Smith & Wesson gun, using U. S. N. R. A., and with Lieutenant Sidney R. Hinds of Fort Snelling, Minnesota squeezing the trigger. Lieutenant Hinds is a nationally known pistol and rifle shot. It will be remembered that his shooting with the Infantry Pistol Team this year was remarkable, and that the winning of the match for the Infantry depended upon Lieutenant Hinds' last shot. He also made a high score for the Infantry in the National Rifle Team Match. Mr. Thomas J. Girkout, of Boston, Massachusetts, placed second, using the same equipment as Lieutenant Hinds, and Mr. Edward R. Hull of Milton Junction, Wisconsin won third place. He used a Colt Automatic .22 caliber pistol with U. S. N. R. A. ammunition. Lieutenant Hinds also won pistol Match No. 2 with a score of 488. In this match, Lieutenant Hinds used a Colt Automatic .22 pistol with U. S. N. R. A. ammunition. Mr. A. E. Hertzler of Halstead, Kansas followed second with a score of 461, and Girkout again placed with a score of 459.

Match No. 11, Individual 50 foot Championship. Mr. A. L. Beal of Keyser, West Virginia, won first place with a score of 598. Mr. Frank J. Valgenti of Philadelphia, Pennsylvania won second, with a score of 597. Both of these riflemen used a Winchester demountable .52 with precision 75 ammunition. Curtis Liston of Johnstown, Pennsylvania, made the same score as Mr. Valgenti, but his score was outranked. He used a B. S. A. 12 with precision 75 ammunition.

Mr. C. G. Harrel, of Chicago won his third match of the present Indoor season and the Gallery 75-foot Championship by making a score of 597 with the Springfield Model .22 in Match 12.

(Concluded on following page)

Results of Match No. 9 (Continued)

Order	Name	Address	Score	Order	Name	Address	Score
13.	H. N. Renshaw,	Nogales, Ariz.	397	38.	Dr. R. J. Hart,	Janesville, Wis.	389
14.	E. S. Shoemaker,	Harlowton, Mont.	397	39.	W. H. Burt,	Thermopolis, Wyo.	389
15.	Raymond C. Bender,	State College, Pa.	396	40.	Lt. S. R. Hinds,	Ft. Snelling, Minn.	389
16.	L. H. Edwards,	Akron, Ohio	396	41.	H. R. Maxfield,	New Hartford, Conn.	388
17.	G. H. Woodworth,	Troy, Pa.	396	42.	Ralph R. Haines,	East Akron, Ohio	387
18.	Philip Babel,	Fresno, Calif.	396	43.	Fred Dau,	Fresno, Calif.	387
19.	I. M. Massey,	Sheridan, Wyo.	396	44.	C. D. Wild,	Janesville, Iowa	385
20.	Norbert Ribble,	Iowa City, Iowa	396	45.	William A. Elcock,	Newport News, Va.	385
21.	C. E. Greenfield, Jr.,	Santa Barbara, Cal.	396	46.	Waddell Austin,	Santa Barbara, Cal.	383
22.	Dr. E. B. Loofboro,	Janesville, Wis.	395	47.	Anthony J. Lynch,	Hartford, Conn.	382
23.	Chas. V. Narlow,	Milwaukee, Wis.	395	48.	James C. Carter,	Santa Barbara, Cal.	382
24.	D. G. Cackler,	Akron, Ohio	395	49.	L. S. Moore,	Newtonville, Mass.	380
25.	H. R. Renshaw,	Nogales, Ariz.	395	50.	Dr. D. B. Wylie,	Salinas, Cal.	380
26.	Leslie D. Kimmel,	Bluffton, Ohio	395	51.	John Long,	Piqua, Ohio	380
27.	William L. Bruce,	Cheyenne, Wyo.	394	52.	F. C. Famayo,	Piqua, Ohio	377
28.	Rowland Williams,	Davenport, Iowa	394	53.	Lee C. Weber,	Davenport, Iowa	376
29.	Lewis C. Sherman,	Columbus, Ohio	393	54.	H. C. Griggs, Jr.,	Santa Barbara, Cal.	371
30.	Morton Solomon,	New York City	393	55.	William Weston,	New York City	364
31.	Floyd D. Gibson,	Iowa City, Iowa	392	56.	Frederick Berger,	Santa Barbara, Cal.	360
32.	Frank A. Williams,	Dayton, Ohio	392	57.	A. Dibblee Poett,	Santa Barbara, Cal.	359
33.	E. W. Pape,	New Britain, Conn.	391	58.	James C. Greenway,	Walla Walla, Wash.	349
34.	Richard W. Carlisle,	New York City	391	59.	David Curran,	Santa Barbara, Calif.	343
35.	William Upton,	Newport News, Va.	391	60.	Wm. M. Affelder, Jr.,	New York City	334
36.	John S. Vhay,	Santa Barbara, Cal.	391	61.	H. W. Conklin,	Casautillo, Texas	334
37.	Chas. C. Berkeley,	Newport News, Va.	390	62.	Chas. Alberts,	Santa Barbara, Cal.	319
				63.	Richard Lesh,	Santa Barbara, Cal.	279

RESULTS OF PISTOL MATCH NO. 1

Order	Name	Address	Score	Pistol	Ammunition
1.	S. R. Hinds,	Fort Snelling, Minn.	541	S & W	U. S. N. R. A.
2.	Thomas J. Girkout,	Boston 27, Mass.	524	S & W	U. S. N. R. A.
3.	Edward R. Hull,	Milton Junc., Wis.	523	Colt Auto.	U. S. N. R. A.
4.	Fred N. Anderson,	Sufern, N. Y.	519	S & W	Palma
5.	Edw. C. Gustafson,	Cleveland, Ohio	516	Colt Auto.	Precision 75
6.	Frank C. Payne,	Los Angeles, Calif.	514	S & W	Palma
7.	Roger M. Kelley,	Pasadena, Calif.	514	Colt Auto.	Palma
8.	Dr. C. J. Morse,	Bristol, Conn.	512	Stevens	Precision 75
9.	Arthur E. Hertzler,	Halstead, Kansas	495	S & W	U. S. N. R. A.
10.	Chas. R. Burdette,	Baltimore, Md.	492	S & W	U. S. N. R. A.
11.	M. R. Boggs,	Christobal, Canal Zone	482		
12.	Jim Barlow,	Halstead, Kan.	480		
13.	Col. C. E. Stodter,	Washington, D. C.	477		
14.	W. W. John,	Christobal, Canal Zone	462		
15.	Harry E. Brill,	Tulsa, Okla.	460		
16.	J. M. Sorensen,	Perth Amboy, N. J.	454		
17.	H. C. Williams,	Los Angeles, Calif.	443		

RESULTS OF PISTOL MATCH NO. 2

Place	Name	Address	Score	Pistol	Ammunition
1.	S. R. Hinds,	Ft. Snelling, Minn.	488	Colt Auto. 22	U. S. N. R. A.
2.	Arthur E. Hertzler,	Halstead, Kan.	461	Colt Auto. 22	U. S. N. R. A.
3.	Thomas J. Girkout,	Boston 27, Mass.	459	Colt Auto. 22	U. S. N. R. A.
4.	H. C. Williams,	Los Angeles, Cal.	438	No record	No record
5.	Roger M. Kelley,	Pasadena, Cal.	436	Colt Auto. 22	Palma
6.	T. F. Meagher, Jr.,	Tulsa, Okla.	434	No record	No record
7.	Harry E. Brill,	Tulsa, Okla.	434	Colt Auto. 22	Palma
8.	Frank C. Payne,	Los Angeles, Cal.	426	No record	No record
9.	Dr. C. J. Moore,	Bristol, Conn.	426	Reising Auto.	Precision 75
10.	Jim Barlow,	Halstead, Kan.	423	Colt Auto. 22	U. S. N. R. A.
11.	Col. C. E. Stodter,	Washington, D. C.	391	Smith & Wesson	U. S. N. R. A.
12.	Chas. R. Burdette,	Baltimore, Md.	387	Colt Auto. 22	U. S. N. R. A.
13.	J. M. Sorensen,	Perth Amboy, N. J.	376	Colt Auto. 22	Winchester 22
14.	A. M. Reynolds,	Schenectady, N. Y.	274	Iver-Johnson	Palma

RESULTS OF SHOOT-OFF MATCH NO. 10

(Individual, Prone)

Order	Name	Address	Score	Rifle	Ammunition
1.	C. G. Harrel,	Chicago, Illinois	400-400-40x	Stevens 414	Precision 75
2.	R. H. McGarity,	Washington, D. C.	400-400-36x	Winchester 52	Palma
3.	F. E. Border,	West Bend, Iowa	400-400-33x	Pet.-Ballard	Tack-Hole
4.	L. W. Somers,	Bangor, Maine	400-399-26x	Neld.-Ballard	Peters T.-H.
5.	Harry E. Brill,	Tulsa, Oklahoma	400-397-29x	Winchester 52	Palma
6.	F. J. Valgenti,	Philadelphia, Pa.	400-397-24x	Winchester 52	Palma
7.	William T. Abbott,	Lynn, Mass.	400-396-26x	Stevens 414	Peters T.-H.
8.	J. H. Ladd,	Sheridan, Wyoming	400-396-21x	Winchester 52	Peters T.-H.
9.	C. J. Chamberlain,	Chicago, Ill.	400-393-15x	Stevens 414	Peters T.-H.
10.	F. C. Payne,	Los Angeles, Calif.	399-400-34x	Winchester 52	Palma
11.	Geo. L. Cutting,	Worcester, Mass.	399-400-33x	Winchester 52	Win. P. 75
12.	T. K. Lee,	Birmingham, Ala.	399-399-34x	Winchester 52	Peters T.-H.
13.	H. H. Jacobs,	Dayton, Ohio	399-399-33x	Stevens 414	Winchester 75
14.	A. K. Friedrich,	Ames, Iowa	399-399-27x	Winchester 52	Palma
15.	Lincoln Riley,	Wisner, Nebr.	399-398-26x	Winchester 52	No record
16.	A. B. Jordan,	Brattleboro, Vt.	399-398-25x	No record	No record
17.	Albert J. Huebner,	Chicago, Ill.	399-398-20x	No record	No record
18.	Fred Johansen,	Joliet, Ill.	399-397-27x	No record	U. S. N. R. A.
19.	Alexander Davis,	Chicago, Ill.	399-394-16x	Stevens 414	Precision 75
20.	Martin C. Frincke,	Berkeley, Calif.	399-390-18x	Winchester 52	Palma

Results of Match No. 10 (Continued)

Order	Name	Address	Score	Order	Name	Address	Score
21.	S. D. Monahan,	Chicago, Ill.	398	46.	W. L. Darling,	Boston, Mass.	393
22.	F. D. Preston,	Fort Wayne, Ind.	398	47.	F. C. Kimmel,	St. Louis, Mo.	393
23.	Col. C. E. Stodter,	Washington, D. C.	398	48.	C. E. Nordhus,	Highland Park, Ill.	393
24.	J. E. Logsdon,	Sheridan, Wyo.	393	49.	W. A. Schwarz,	Vancouver, Wash.	393
25.	Earl D. Sulcer,	Chicago, Ill.	398	50.	H. O. Waters,	Salt Lake City, Utah	393
26.	Roger M. Kelley,	Pasadena, Calif.	398	51.	Albert Atherton,	Chicago, Ill.	393
27.	O. H. Maberry,	West Bend, Iowa	398	52.	Eric Johnson,	Cleveland, Ohio	392
28.	J. R. Mooney,	Chicago, Ill.	397	53.	W. S. Gibbons,	Boston, Mass.	392
29.	Robert T. Markle,	Harlowton, Mont.	397	54.	James R. Satava,	Cleveland, Ohio	392
30.	Edward Montag,	West Bend, Iowa	397	55.	Walter Mott,	Chicago, Ill.	390
31.	A. C. Van der Bent,	Philadelphia, Pa.	397	56.	Chas. R. Strong,	Ardmore, Penna.	389
32.	Harry Palmer,	Sheridan, Wyo.	397	57.	Martha M. McKelvey,	Ames, Iowa	389
33.	Francis W. Parker,	Chicago, Ill.	397	58.	H. A. Weymouth,	Salt Lake City, Utah	389
34.	J. S. Palmore,	Cristobal, Canal Zone	396	59.	O. A. Frentzel,	Wisner, Nebr.	389
35.	J. A. Wade,	Sheridan, Wyo.	396	60.	Miller Wells,	Chester, W. Va.	389
36.	William W. John,	Cristobal, Canal Zone	396	61.	George Scott,	Audubon, N. J.	388
37.	Daniel V. Brodhead,	Monrovia, Calif.	396	62.	Chas. J. L. Kress,	Pittsburg, Penna.	385
38.	Frank Hogan,	Salt Lake City, Utah	395	63.	Harry L. Oyster,	Chester, W. Va.	385
39.	Max R. Boggs,	Cristobal, Canal Zone	395	64.	R. B. Greig,	Oak Park, Ill.	385
40.	Pearl T. Clapp,	Brattleboro, Vt.	395	65.	G. J. Weldmaier,	Dunkirk, N. Y.	384
41.	Fred N. Anderson,	Suffern, N. Y.	395	66.	Harry Morrell,	New Haven, Conn.	384
42.	Jesse O. Norcross,	Shrewsbury, Mass.	394	67.	Merton J. Hands,	Port Huron, Mich.	384
43.	A. B. Sprague,	Worcester, Mass.	394	68.	C. C. Dyer,	Washington, D. C.	381
44.	J. V. McKelvey,	Ames, Iowa	394	69.	Nick Kipp,	Rosebud, Mont.	381
45.	A. E. Hart,	Cleveland, Ohio	394				

RESULTS OF MATCH NO. 27

(Military Company)

Place	Organization	Address	Score	Rifle	Ammunition
1.	Co. "A" 121st Engineers	D. C. N. G., Washington, D. C.	3584	Springfield	U. S. N. R. A.
2.	Co. "B" 17th U. S. Infantry	No. 1, Fort Crook, Neb.	3564	Springfield	U. S. N. R. A.
3.	Troop "A" 113th Cav.,	I. N. G., Iowa City, Iowa	3534	Springfield	U. S. N. R. A.
4.	Hq. Co. 17th U. S. Infantry,	Fort Crook, Neb.	3409	Springfield	U. S. N. R. A.
5.	Co. "E" 121st Eng.,	D. C. N. G., Washington, D. C.	3396	Springfield	U. S. N. R. A.
6.	Hq. & Ser. Co. 121st Eng.,	D. C. N. G., Washington, D. C.	3377	Springfield	U. S. N. R. A.
7.	Co. "H" 160th Inf.,	Calif. N. G., Los Angeles, Cal.	3375	Springfield	Palma
8.	Co. "A" 17th U. S. Infantry,	Fort Crook, Nebraska	3361	Springfield	U. S. N. R. A.
9.	Co. "A" 2nd U. S. Engineers,	Ft. Sam Houston, Texas	3349	Stevens 414	Winchester
10.	Co. "D" 2nd U. S. Engineers,	Ft. Sam Houston, Texas	3337	Savage 21379	U. S. N. R. A.
11.	Co. "B" 17th U. S. Infantry	No. 2, Fort Crook, Nebr.	3316	Springfield	U. S. N. R. A.
12.	Service Co. 17th U. S. Inf.,	Fort Crook, Nebraska	3307	Springfield	U. S. N. R. A.
13.	Co. "B" 159th Inf.,	Calif. N. G., Berkeley, Calif.	3284	Springfield	Palma
14.	24th Company U. S. M. C.,	Guantanamo, Cuba	3279	Springfield	U. S. N. R. A.
15.	Co. "B" 2nd U. S. Engineers,	Ft. Sam Houston, Texas	3276	Savage 21348	Winchester
16.	Co. "C" 17th U. S. Infantry,	Fort Crook, Nebraska	3272	Springfield	U. S. N. R. A.
17.	Barracks Detach. U. S. M. C.,	Guantanamo, Cuba	3243	Springfield	U. S. N. R. A.
18.	Co. "L" 167th Inf.,	Ala. N. G., Birmingham, Alabama	3161	Winchester 52	Precision 75
19.	Co. "E" 180th Inf.,	Okla. N. G., Durant, Oklahoma	3149	Winchester 52	U. M. C. .22
20.	Co. "D" 160th Inf.,	Calif. N. G., Los Angeles, Calif.	3059	No record	No record
21.	Hq. Co. 160th Inf.,	Calif. N. G., Los Angeles, Calif.	3055	No record	No record
22.	Troop "A" 107th Cav.,	Ohio N. G., Cleveland, Ohio	2994	Springfield '03	Peters .22 short
23.	Reg. Hq. 160th Inf.,	Calif. N. G., Los Angeles, Calif.	2960	Winchester 52	Winchester 200
24.	Ser. Co. 160th Inf.,	Calif. N. G., Los Angeles, Calif.	2947	Winchester 52	U. S. N. R. A.
25.	Co. "K" 160th Inf.,	Calif. N. G., Los Angeles, Calif.	2778	Springfield	No record

(Continued on following page)

He used Peters tackhole ammunition. This is a remarkable score, and also remarkable in that Mr. Harrel seems to be able to consistently turn in high scores with any of the country's best Small-Bore riflemen. Mr. F. E. Border of West Bend, Iowa placed second. His score was 588 and he used the same combination in this match as he did in Match No. 8. A. E. Hart of Cleveland, Ohio, using a Ballard Hoffman and U. S. N. R. A. ammunition tied the score of Mr. Border and placed third.

The Director of Civilian Marksmanship

Conducted by Col. C. E. Stodter

LETTERS received from riflemen indicate that my notice in regard to .22-caliber ammunition, published in the January 1st issue of THE AMERICAN RIFLEMAN, was not clear. The notice referred only to the .22-cal. short ammunition which has been issued to rifle clubs as a free issue. It did not refer to the .22-caliber long rifle ammunition we have for sale. The .22-caliber long rifle ammunition is fresh and of excellent quality. Several requests have been received from persons desiring to purchase the unserviceable .22-caliber short ammunition at a reduced price. Ammunition of this kind now on hand in the Ordnance Department is unfit for use as the lubricant has hardened to such an extent as to render it inaccurate, causing it to foul the barrel very quickly. None of this ammunition will be sold.

We have no more Russian rifles available at this time. They will not be available until a supply is received which is being shipped from Manila. It is requested that those who desire to purchase these rifles hold their orders until about April 1st, when it is expected that the new supply will be available. Reports received from purchasers of these rifles indicate that they are giving much satisfaction. One purchaser has written that he has been shooting woodchucks with this rifle at 400 and 600 yards, others report that they have made excellent hunting rifles by cutting the barrel off to 22 or 24 inches and fitting with sporting sights.

Frequent letters are received in this office from riflemen who desire to have a comparison of the accuracy of various types of rifles, or a statement as to the size of the group that can be made with a specified rifle at various ranges. It is very difficult to give a definite answer to these questions. If the writers will read carefully the article by Major Whelen in THE AMERICAN RIFLEMAN for February 15th, entitled "What is Accuracy?", I think they will realize that it is almost impossible to state definitely that any rifle will make a certain size group at a specified range. Taking the .22-caliber rifle for example, we find that there is some slight variation in various rifles turned out by the same firm. Again, we find that the same ammunition will not shoot equally well in several different makes of rifles, and that usually one brand of ammunition will give better

results in a certain rifle than others. Also, the conditions under which rifles may be tested vary so greatly that one day we might get a two inch group at 100 yards, while on the next day the group might be four inches. It is almost impossible to compare the various makes of .22-caliber rifles as to accuracy. However, any good .22-caliber should be capable of making a two inch group at 100 yards, but the rifleman who purchases one of the best grades of .22-caliber rifles should not be disappointed if he fails to make such a group when first testing his rifle. We often read of the remarkable performance of rifles or of ammunition, or both, but fail to remember that these usually are specially selected groups shot under the most favorable conditions, and that they do not represent the average accuracy of the rifle or the ammunition. Accuracy depends on the rifle, the ammunition, the sights, the rifleman. With so many different factors involved it can be readily seen that we cannot make a definite statement that will hold good for all rifles of any designated make or of all ammunition produced by the same maker. The rifles listed in our price list are believed to be the best available for target shooting. Whether the prospective purchaser buys a Springfield, Winchester, Stevens, or Savage depends very largely upon the amount of money he is willing to spend and the type of rifle he desires. Each one of them is carefully made and should give satisfactory results. The same considerations apply to rifles of larger caliber, although it is probable that they are not quite as temperamental as the .22-caliber rifle. It is a great satisfaction, of course, to the purchaser to receive a test target showing a small group, as it gives him a certain confidence in the rifle, but it does not mean that the same group can be made every time the rifle is fired or regardless of the ammunition used. Even if tested by the same man and under the same conditions the rifle might do better or worse the next day.

SIXTH U. S. CAVALRY DEVELOPING RIFLEMEN

The Sixth Cavalry, stationed at Fort Oglethorpe, has adopted a plan for the stimulation of interest in rifle shooting within the regiment that gives promise of a regiment of close holders. The plan contemplates the selection of a regimental rifle team along the line of the mythical all-American football eleven. The team will be composed of one enlisted man from each troop having the best record over the Class A course. This regimental team will then be awarded a set of attractive silver medals commemorating their appointment to the team for 1924. A ramification of this plan which would add to its value would be for other teams to adopt the same scheme and then, through the N.R.A., or by direct communication, fire the match on their home ranges, exchanging the scores by telegraph to decide which regiment really had the best marksmen over the Army Course A.

All plans of this nature which seek to give prominence to rifle shooting as a sport, are exceedingly well worth while. The picking of such teams stimulates the keenest kind of rivalry between regimental units in the race to see which of the various organizations gets the greatest number of men on the "All-Regimental."

RESULTS OF MATCH NO. 12 (Individual Championship 75 Feet) (Continued from page 21)

Place	Name	Address	Score	Pistol	Ammunition
1.	C. G. Harrel,	Chicago, Ill.	597	Springfield M.22	Peters T.-H.
2.	F. E. Border,	West Bend, Iowa	588	Peterson-Ballard	Peters T.-H.
3.	A. E. Hart,	Cleveland, Ohio	588	Ballard-Hoffman	U. S. N. R. A.
4.	T. K. Lee,	Birmingham, Ala.	587	Winchester 52	Peters T.-H.
5.	O. H. Maberry,	West Bend, Iowa	587	Peterson-Ballard	Peters T.-H.
6.	J. A. Wade,	Sheridan, Wyo.	587	Winchester 52	Peters T.-H.
7.	Albert J. Huebner,	Chicago, Ill.	587	No record	No record
8.	Col. C. E. Stodter,	Washington, D. C.	586	Winchester-Pope	U. S. N. R. A.
9.	E. F. Burkins,	Wilmington, Del.	585	Winchester 52	Palma
10.	H. C. Williams,	Los Angeles, Cal.	585	Springfield	U. S. N. R. A.
11.	L. W. Somers,	Bangor, Maine	584	Peterson-Ballard	Peters T.-H.
12.	Edwin N. Moor Jr.,	San Francisco, Cal.	582	Stevens 1124	U. S. N. R. A.
13.	A. K. Friedrich,	Ames, Iowa	579	Winchester 52	Peters T.-H.
14.	Harry Palmer,	Sheridan, Wyo.	579	Winchester 52	Peters T.-H.
15.	J. H. Ladd,	Sheridan, Wyo.	579	Winchester 52	Peters T.-H.
16.	Eric Johnson,	Cleveland, Ohio	578	Hoffman-Ballard	Precision 75
17.	R. C. Stokes,	Washington, D. C.	578	Peterson-Ballard	Remington Palma
18.	Edward Montag,	West Bend, Iowa	577	Peterson-Ballard	Peters T.-H.
19.	William W. John,	Cristobal, Canal Z.	576	B. S. A. 12	Palma
20.	H. W. Dunlap,	New Castle, Pa.	576	Winchester 52	Peters L. R.
21.	Fred Johnson,	Joliet, Ill.	575	Winchester 52	U. S. N. R. A.
22.	Frank Hogan,	Salt Lake City, Utah	575	Stevens 414	Palma
23.	Martin C. Frincke Jr.,	Berkeley, Cal.	575	Winchester 52	Palma
24.	H. H. Jacobs,	Dayton, Ohio	574	Stevens 414	Precision 75
25.	Leslie A. Moss,	Los Angeles, Cal.	573	Springfield	Palma
26.	A. B. Sprague,	Worcester, Mass.	573	Stevens 75793	Precision 75
27.	Max R. Boggs,	Cristobal, Canal Z.	573	Stevens 414	Palma
28.	F. C. Payne,	Los Angeles, Cal.	573	Winchester 52	Palma
29.	W. A. Schwarz,	Vancouver, Wash.	573	Winchester 52	U. S. N. R. A.
30.	Roger M. Kelley,	Pasadena, Cal.	572	Springfield	Palma
31.	Albert Atherton,	Chicago, Ill.	571	No record	No record
32.	E. J. Back,	Vancouver, Ill.	571	Winchester	U. S. N. R. A.
33.	Harold J. Wood,	Bridgeport, Conn.	571	Remington	Palma
34.	George L. Cutting,	Worcester, Mass.	568	B. S. A. 12	Precision 75
35.	C. E. Nordhus,	Highland Park, Ill.	565	No record	No record
36.	Harry Morrell,	New Haven, Conn.	564	No record	No record
37.	H. O. Waters,	Salt Lake City, Utah	564	Winchester 52	Palma
38.	F. D. Preston,	Fort Wayne, Ind.	562	No record	No record
39.	J. C. Logsdon,	Sheridan, Wyo.	562	Winchester 52	Peters T.-H.
40.	Francis W. Parker,	Chicago, Ill.	561	B. S. A. 12	Peters T.-H.
41.	Arthur Strode,	Vancouver, Wash.	558	Springfield	U. S. N. R. A.
42.	C. R. Dillabaugh,	Vancouver, Wash.	557	Springfield	U. S. N. R. A.
43.	V. F. Masson,	Hillsville, Penna.	556	Savage 20260	Precision 75
44.	Jesse O. Norcross,	Shrewsbury, Mass.	556	Winchester 52	Precision 75
45.	Wm. Thomas Abbott,	Lynn, Mass.	554	Stevens 414	Peters L. R.
46.	Lt. George Scott,	Audubon, N. J.	553	Stevens 414	U. S. N. R. A.
47.	S. R. Bonsey,	Bangor, Maine	553	Winchester 52	Peters
48.	Ned E. Cutting,	Los Angeles, Cal.	552	B. S. A. 12	Palma
49.	H. A. Weymouth,	Salt Lake City, Utah	551	Stevens 414	Palma
50.	Harry E. Brill,	Tulsa, Oklahoma	551	Winchester 52	Palma
51.	Alexander E. Sorum,	Vancouver, Wash.	550	Winchester 52	U. S. N. R. A.
52.	C. E. Hueman,	Seattle, Wash.	549	Stevens 414	Palma
53.	Jack Caraway,	Vancouver, Wash.	547	Savage 19687	U. S. N. R. A.
54.	D. V. Boodhead,	Monrovia, Cal.	544	Winchester 52	Palma
55.	W. L. Darling,	Boston, Mass.	543	No record	No record
56.	F. W. Putnam,	Detroit, Mich.	542	Winchester 87	U. S. N. R. A.
57.	G. R. Farr,	Seattle, Wash.	538	Savage	U. M. C.
58.	W. S. Gibbons,	Boston, Mass.	538	No record	No record
59.	Dr. I. V. Cole,	Seattle, Wash.	536	Winchester 52	Peters
60.	Walter Mott,	Chicago, Ill.	536	Springfield	Palma
61.	H. H. McClung,	Detroit, Mich.	525	Springfield	U. S. N. R. A.
62.	Chas. F. Johnson,	Mount Vernon, N. Y.	524	Savage	U. S. N. R. A.
63.	Dr. H. R. Brunton,	Malden, Mass.	523	Springfield	U. S. N. R. A.
64.	C. C. Finn,	Seattle, Wash.	522	Winchester	Peters T.-H.
65.	Earl D. Sulzer,	Chicago, Ill.	518	Winchester	Peters T.-H.
66.	Smith V. Haegen,	Orchards, Wash.	511	Winchester	U. S. N. R. A.
67.	Harold Carlton,	Detroit, Mich.	509	Winchester	U. S. N. R. A.
68.	P. A. Wiedmaier,	Dunkirk, N. Y.	502	Springfield	U. S. N. R. A.
69.	G. J. Wiedmaier,	Dunkirk, N. Y.	488	Springfield	U. S. N. R. A.
70.	H. Bishop,	Detroit, Mich.	482	Winchester 52	U. S. N. R. A.

Not Completed

Merton J. Hands, Port Huron, Mich.

C. W. Randall, Alameda, Calif.

Not Reported

Lawrence J. Corsa, New York City

S. D. Monahan, Chicago, Ill.

Robert T. Markle, Harlowton, Mont.

W. R. Hinckley, Seattle, Wash.

J. R. Mooney, Chicago, Ill.

Chas. R. Strong, Ardmore, Pa.

James R. Satava, Cleveland, Ohio

Lawrence C. Leighton, Cristobal, Canal Z.

A. C. Van der Bent, Philadelphia, Pa.

J. S. Palmore, Cristobal, Canal Z.

Geo. W. Wisdom, Vancouver, Wash.

Louis R. Jefferey, Philadelphia, Pa.

THE DOPE BAG



A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS

ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL

Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolvers: Major J. S. Hatcher

Shotgun and Field Shooting: Capt. Charles Askins

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Are Special Cartridges Justified?

By Major Townsend Whelen

THERE is an increasing tendency among rifle-men of today toward the procurement not only of specially built rifles, but of the special cartridge. In many instances, when the specifications have been intelligently drawn, a load of extreme accuracy will result. But in the light of the highly satisfactory standard loads which are available today, and the complications which attend the manufacture of special cartridges, it is a question whether such undertakings are always worth while.

Inquiries from B. R. Julian, of Omak, Washington, supply an opportunity to discuss this matter of special cartridges. And I am convinced that when all the facts are generally known, the rifle-men of the country will realize that they are seeking a very great deal when they state preferences for special cartridges.

Right here, and before going into the details of the special cartridge problem, every rifleman may assume that in almost every caliber one can find an efficient factory cartridge which will give all the velocity that can be utilized, and in which existing modern powders burn at maximum efficiency. On these charges, full loading data is available as well as excellent factory loads. For these reasons it is rarely desirable to have a rifle and cartridges made to order, and if it is done properly, it costs like the very devil.

Getting down to a specific instance for the sake of discussion, Mr. Julian states that he is considering having made, in one of the gun factories that specialize on this kind of work, a Springfield action fitted with a 26-inch barrel, to be chambered and rifled to take the .30-caliber Model 1906 shell necked down to 7 mm. In connection with this proposal he asks:

"Is it not true that the regular 7 mm. shell is a bit lacking in powder room?"

"Would it not be a better cartridge if it had more air space between powder and bullet?"

"Do you believe this gun could be given a twist to the rifling so that it would shoot the 139-grain, also the regular 175-grain round point bullets with good accuracy?"

"It seems to me that the 7 m.m. midway between the .25 and .30 caliber is the best all around caliber."

There is no doubt that a good gunsmith can make a most excellent rifle, chambered and bored for the .30-06 case necked down to 7 m.m. Such

a rifle will be extremely accurate, and would probably give about 100 f.s. more velocity than with the regular 7 m.m. Mauser case, subject to remarks as to pressures given below. But I do not believe it would pay to have such a rifle made for the following reasons:

Unless the gunsmith already has chambering tools and case reducing dies for this cartridge, or unless he sees sufficient demand for such a cartridge, he would probably and naturally ask the rifleman giving the order to bear all or part of the expense of making these tools. A conservative estimate of the cost of making such tools, not including the cost of the rifle, would be \$500.00.

Such a rifle would use a case which is not on the market. Unless the shooter bought the reducing dies and an arbor press, he might find difficulty in after years in getting cartridge cases.

No pressure gun would be available for such a cartridge. A pressure gun would cost about \$250.00, and the taking of a series of pressures would cost about \$100.00 additional. Unless a pressure gun is available, one never knows exactly what pressures he is getting or exactly what he is doing. Without such a check on charges prudence dictates that increases in charges stop just as soon as the appearance of the primer and case seems to indicate that a pressure of somewhere around 48,000 to 50,000 pounds is approaching. You dare not go higher than this because you do not know but what you have passed the critical charge where the pressure may occasionally sail way up to dangerous figures. So you are forced to stop at a point where you know that the pressures are safe. Such an estimated point will probably not give you velocities any higher than if you used the regular 7-m.m. Mauser cartridge. If, however, you had a pressure gun available, pressures could be accurately worked up to 52,000 to 53,000 pounds, and this would probably give you, with the .30-06 case necked down, a velocity about 100 f.s. more than could be obtained from the 7-m.m. cartridge. You do not gain much over the latter cartridge because this regular 7-m.m. cartridge is just about right to burn the powder in this caliber at its maximum efficiency.

From the regular 7-m.m. cartridge you can get muzzle velocities of 2,400 f.s. with the 175-grain bullet, or about 3,000 f.s. with the 139-

grain bullet. This is about all the velocity you can use or need. For example, with the 139-grain bullet you gain little by increasing muzzle velocity above 3,000 f.s. because the increased air resistance which occurs at over that velocity very soon reduces remaining velocities and trajectory to little more than those given with a muzzle velocity of 3,000 f.s. With the 175-grain bullet best killing effect is obtained at a velocity which causes the bullet to mushroom, but which is not so high as to cause it to fly to pieces. With ordinary 175-grain bullets at ordinary hunting ranges, this muzzle velocity is about 2,250 f.s., but the Western Cartridge Company has recently adopted a 175-grain bullet for their standard heavy bullet 7-mm. cartridge, which has a very thick Lubaloy jacket, and only a pin point of lead exposed at the point, and I think that this bullet will mushroom, but will usually hold together at ordinary hunting ranges when delivered at velocities up to 2,400 f.s. So far as I know, no expanding or mushrooming bullet has yet been designed which will mushroom and still hold together at ordinary hunting ranges when delivered at a velocity much over 2,400, or perhaps 2,500 f.s. With the 139-grain bullet at 3,000 f.s. your bullet usually flies all to pieces. With it you often get the great advantage of an explosive effect in chest or abdominal cavity, but you also too often have failures because the bullet went to pieces on heavy bones and did not penetrate into the vitals. The 7-m.m. is an excellent game cartridge if the 139-grain bullet be used on deer and sheep, and the 175-grain bullet on caribou, goat, elk, moose, and bear.

HANDLOADING RIMFIRES

WOULD it be practical to hand load 25 caliber Stevens rimfire cartridges? I do not mean "reload" but to load by hand, beginning with the new, empty, clean case.

I want them hand loaded with black powder for some experimental work. Where could the priming be obtained, and what is the proper name for it?

Would it be dangerous to handle? If you will kindly answer these questions by mail it will be much appreciated by a student of Rifles and Calibers. Hoping to hear from you soon, I am, J. H. S., Gravette, Ark.

Answer (by Maj. Whelen). The priming of rimfire cases is entirely beyond the amateur. It involves high skill as an explosive chemist, elaborate equipment, and is always attended with danger. The best you can do is to purchase .25 Rim Fire cartridge cases already primed and use them.. I think you can get them in lots of 1,000.

THE RANGE OF BULLETS

IN looking over an old number of the AMERICAN RIFLEMAN, I ran across your article in that issue, "High Speed Loads in the Springfield." In it you mention the light mushroom bullet probably going to pieces upon striking a solid object.

May I ask your opinion of the Model 25 Remington cal. 25-20 using the new Hi Speed cartridge? Is this a good gun in settled communities, or does it carry too far for safety?

I am enclosing a stamped envelope for reply. If you will answer these few questions for me I am sure they will be greatly appreciated.

H. C. A., Manchester, Ia.

Answer (by Maj. Whelen). No rifle is suitable for use in settled communities, unless the shooter takes pains every time he shoots to see that there is something back of the point of aim which will stop the bullet. Even the .22 Long Rifle cartridge has an extreme range* of 1400 yards, and the .25-20 probably over 2,000 yards. Extreme range with rifles is usually obtained at an elevation of about 25 degrees (not 45 degrees

as popularly supposed). I would say that within a range of 300 yards the .2520 Hi Speed bullet will usually go to pieces on impact with hard substances. As the range increases the liability to glance or ricochet increases.

PEAK VELOCITY IN THE .405

I NOTICE numerous advertisements boosting large bore cartridges of new design, around 40 caliber. I would like to know why the .405 caliber Winchester cannot be speeded up with good results. Supposing enough powder, of the new progressive type, was used to secure, say 2400 f. s., what would be the result?

Surely the rifle would stand it, as the .30 cal. Springfield '06, even with the standard load, to say nothing of the various high speed and heavy bullet loads, has a greater backward thrust on the block or bolt, also I believe, a greater breech pressure. Am I not right? What load would produce 2400 f. s. to best advantage? C. B. W., Schenectady, N. Y.

Answer (by Maj. Whelen). The heaviest loads and highest velocity that can be obtained from the .405 Winchester rifles are 53 grains of du Pont No. 16 Powder, giving a muzzle velocity of 2192 f. s. and 52.2 grains of Hercules Hi Vel giving a muzzle velocity of 2207 f. s. The powder capacity of the case is a little bit too small to allow of real high velocities.

INACCURACIES IN THE .45

WILL you please give me some advice on a Colt, caliber .45, automatic pistol I have just bought? I can't hit the broad side of a barn with it. I am used to shooting pistols. I have a Colt .22 pistol that is very accurate, and I have fired .45-caliber pistols that were very good.

The pistol is a government model 1911, and appears to be in perfect condition. The barrel isn't worn at all, and the bullets have very deep land marks on them. The number is 89122, and it is supposed to have come from the National Matches. The trigger pull is unusually light for a .45. The barrel bushing doesn't fit the barrel very closely, it is about one-sixty-fourth-inch large, would that be the trouble?

The gun doesn't shoot off to any particular place, but scatters all around a two-foot circle at 20 yards. I sighted it very carefully, but couldn't get a good target with it. I was using government ammunition marked U. S. C. Co. 18. This ammunition gave good results in another pistol. H. B. M., Tacoma, Wash.

Answer (by Maj. Hatcher). It is very hard to tell you what causes the inaccuracy in your .45 automatic pistol without seeing the weapon. Even when the gun is available, it is sometimes hard to tell what causes this inaccuracy.

The most usual cause for trouble of this nature is looseness of the barrel bushing. Sometimes this poor fit is due to small outside diameter of the barrel, and sometimes to a large inside diameter of the bushing.

The chances are that by using a new barrel bushing, you will overcome the difficulty, but if this does not help, you will probably have to use a new barrel also.

RELOADS FOR THE .38 AND .45

AM writing to ask if you will give me the benefit of your experience in reloading for the .44- and .38-caliber S & W Special revolver cartridges.

My greatest trouble has been in trying to work up a satisfactory load for the .44 for use on the indoor range at twenty yards, with light bullet and powder charge, in order to cut down the noise of firing and still maintain accuracy. Have tried both No. 3 and No. 80 with the square-point, 176-grain bullet, but in both cases have found unburned powder grains in the shells and in

the barrel after firing, also accuracy none too good.

Probably neither of these powders is as well adapted to light loads as a powder such as Bull's-Eye, which I have never tried, being unable as yet to obtain any in this location.

With the regular 246-grain, round-nose bullet as made by the Rem. UMC. Co., have had fair success on the outdoor range with a charge of 10 grains of No. 80; but, while this load seems to swell the base of some of the shells (Peters), making extraction a little difficult there is still evidence of incomplete combustion, as a few unburned grains still show. Accuracy fair.

Is du Pont No. 3, as formerly sold by the Ordnance Department, well adapted to this bullet for full loads, or is there some other powder which you would recommend as better? If so, what load?

Have you ever used Ideal bullet No. 429352, weighing 245 grams, and having square nose? If so, what do you think of it?

To put the matter in the fewest words, I would like, if possible, for you to give me the most accurate loads you know of in both full load and short range, for both the .44- and .38-caliber S & W Specials, giving the powder, charge of same and bullet. W. H. R., Berkeley, Calif.

Answer (by Maj. Hatcher). Du Pont Pistol Powder No. 3, which was formerly sold by the Ordnance Department, is similar to No. 5, and is well adapted to full loads for practically all pistol cartridges.

It is not, however, very well adapted to reduced loads.

No. 80 is primarily a rifle powder, and will not burn completely in any pistol cartridge. No. 80 is recommended by du Pont for the rifle cartridges that are used in pistols also, such as the .32-20, .38-40, and .44-40.

No. 80 can also be used with satisfaction in other large-capacity revolver cartridges, and will give good accuracy, but in no case can it be expected that all the powder will be burned up, as it requires a longer barrel to give clean burning. This poor burning is not a very serious disadvantage, however, provided accuracy is obtained.

For full loads with the .44 Special, use the 246-grain bullet with five and eight-tenths (.58) grains of No. 3, or ten (10) grains of No. 80.

It is very hard to get satisfactory reduced loads using the regular .44 Special cartridge case, as there is too much air space for the amount of powder.

I would suggest that you load your reduced charges in the .44 Russian case, which will fit the cylinder of your .44 Special revolver.

With the 175-grain bullet, you will get good results with two and eight-tenths (2.8) grains of Bull's-Eye powder.

Bull's-Eye is better adapted to very small loads than No. 3, but you can try small charges of No. 3, or No. 80, and you may get something to give you satisfaction in the small .44 Russian cartridge case.

I think Ideal 429352 is a very good bullet, and will give satisfactory accuracy.

For the .38 Special, use the 158-grain bullet with four and five-tenths (4.5) grains of du Pont Pistol Powder No. 3.

For a reduced load you can put the same bullet into the .38 long Colt cartridge, which has less powder space, and load two and five-tenths (2.5) grains of du Pont No. 3.

HANDGUN GROUPS

WHAT size groups must a revolver be capable of producing in order to equal the holding ability of a 90 to 95 per cent shot on the U. S. R. A. 20- and 50-yard targets?

What are the relative sizes of groups of .22 shorts, longs, and long rifles as shot from a 6-inch target revolver and 10-inch pistol?

Can cleaning a revolver with a metal rod from the muzzle impair its accuracy to an extent noticeable to an expert?

If a .38 Special will make 2-inch groups at 50 yards, and a .44 Russian will make 3-in. groups at

the same distance, will this difference show in the groups of either an average or expert shot, other things as recoil, weight of gun, etc., considered as being equal?

Do the foremost revolver or pistol shots use special barrels?

How does a 4-inch barrel compare to a 6-inch in accuracy? W. L. G., Cedar Rapids, Iowa.

Answer (by Maj. Hatcher). A group 5.5 inches in diameter on the 50-yard target, or 1.88-inches in diameter on the 20-yard target, if properly centered, is equivalent to a score of ninety-four (94). It is difficult to say how much of this group size is due to the original dispersion of the revolver or pistol, and how much is due to inaccuracy in holding and sighting, as these factors vary very largely with individual guns and individual marksmen.

The error of the average ninety per cent (90) shot is probably equal to or slightly greater than the error of his gun, so that gun shooting a group of from 2 3/4-inches to 3 inches at 50 yards, should bring a ninety-five per cent (95) score with excellent holding and sighting.

I have no relative data on .22 shorts and longs as compared with the long rifle. The .22-caliber long rifle cartridge in a 10-inch pistol held in a rest, will make groups of from 1 inch to 2 inches in diameter at 50 yards with the very best ammunition and pistol combination.

Cleaning a revolver from the muzzle will not impair its accuracy at all, provided reasonable care is taken.

The difference between a 2-inch group and a 3-inch group at 50 yards would show up very decidedly with an expert shot, but would not be so noticeable with an average shot.

The foremost revolver and pistol shots use regular factory barrels, as the kind turned out on target revolvers and pistols are, in my opinion, fully equal to those made by special makers.

A 6-inch barrel on a revolver has some advantage in accuracy over a 4-inch barrel. The most of this advantage is due to the longer sight radius. There are no exact figures available on this, but as a rough estimate I should say the 6-inch barrel has a twenty per cent (20) advantage.

A BRUSH GUN

IT IS my intention to purchase in the near future a 20-gauge Remington repeating shotgun. Being very partial to a short barrel, and not caring to buy more than one, I have about decided to get the 26-inch one, full choke.

Most of my hunting is for birds and rabbits. Do the "Brush" loads give satisfaction on birds?

We try once each year to spend a few days at the lakes after ducks. Can this short barrel be used with any satisfaction on them?

I have an old .50-70 Remington carbine with reloading tools. What kind of smokeless powders should I use, and about how much? Can you suggest a short-range load? W. W. E., Indianapolis.

Answer (by Capt. Askins). I can only advise you to procure the barrel that I would use myself for that Remington pump, a 28-inch barrel, modified choke—provided such barrel is for all-round use. You will find the barrel plenty fast enough on such a light gun, and you will align the longer barrel more accurately than you would the 26-inch. The longer barrel would give you rather better velocity too, when using the ounce load of progressive powder. The 28-inch barrel would be a decided advantage for ducks, and you ought to take all birds up to at least forty yards, shooting the modified choke, which is about as good as full choke, when the heavier cartridges are used.

In the .50-70 Remington, use du Pont No. 1 powder, which is the kind that gives the same velocity as black powder and about the same pressure. Use the same bulk measure. It is always well in loading experimentally, to begin with a few grains less of powder and build up a grain at a time until you get what you want.

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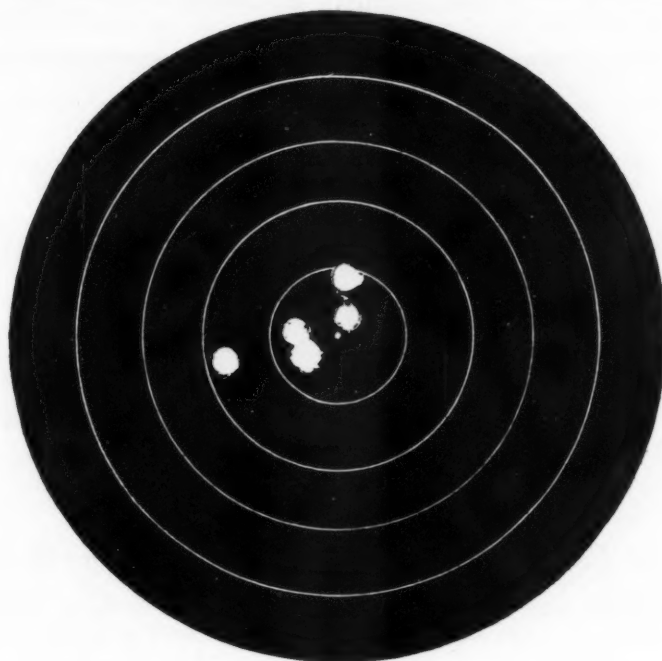
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A Clean Sweep to Date

THE 1924 program of the Metropolitan Rifle League calls for eight Re-Entry Matches on the Pope four-tenths inch ring target at 100 yards. Three of these matches have been held to date at the 47th Regiment Armory, Brooklyn, N. Y., and all three have been won by shooters using the US .22 N. R. A.

The first match of the series was won by Joseph Martin, of the Manhattan (N. Y.) Rifle Club who scored 24x25 on January 19. Mr. Martin's target is reproduced above. Pope barrel used.

The second match on January 6 and the third match on February 2 were won by John Wallace Gillies, of the Roosevelt (N. Y.) Rifle

Club. Mr. Gillies turned in a score of 22x25 on both occasions. Peterson barrel used.

This gives the US .22 N. R. A. a clean sweep to date.

It was this sure-shooting .22 which helped J. Hilborn, of the Seneca (N. Y.) Rifle Club, to register the highest score made during the 1923 Re-Entry Matches of the Metropolitan Rifle League. Mr. Hilborn shot a perfect score of 25x25 using a .22 Springfield.

Shooters find that the US .22 N. R. A. is accurate and uniform year after year. And don't forget that this famous .22 lengthens the life of your barrel because it is primed with a special mixture which is virtually non-fouling and non-erosive.

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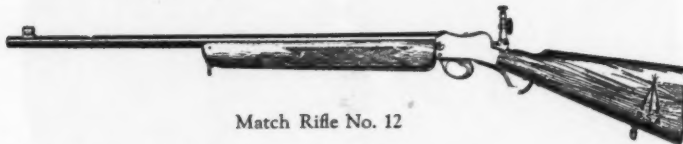
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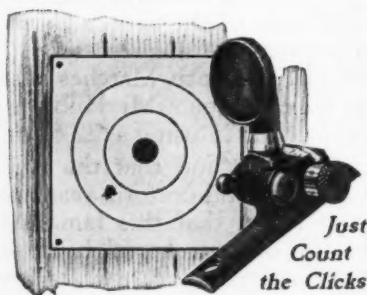
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Annual Metropolitan Handicap and International Matches for 1924

Will be held at the 47th Regiment Armory, Marcy Avenue and Lynch Street, Brooklyn. Take Brooklyn subway under Municipal Building, Chambers Street, Manhattan, the Broadway local train, to Lorimer Street, third station after crossing bridge, walk back one block to Lynch Street, turn left two blocks to Marcy Avenue.

On consecutive Saturdays, from January 19th to March 8th 1924, From 3 to 10 o'clock P. M.

Class A. First seven Saturdays. Any .22 rimfire rifle HANDICAP. Limited to 75 targets. Handicap determined by adding to total of best 10 of first 20 targets shot a handicap not exceeding 25 points to bring such total to 980. Final counting score will be the total of best 10 targets shot plus handicap.

For money prizes all ties will divide; for instance, if three men tie for first, divide first three moneys equally. In case of ties for medals the man with lowest handicap will win; and if still a tie, by the total of the next best 10 targets. A man may shoot any .22 rifle, sights, or ammunition, but a change in sights after the handicap is fixed will place him at scratch.

Class B. First three Saturdays only. The Springfield rifle substantially as issued. Limited to 50 targets. Best 10 to count. Ties decided by next best 10. Ammunition, reduced gallery loads only.

For both matches. Targets will be 100-yard N. R. A. decimal, four-inch bull. Prizes: The receipts for each match, less expenses, will be divided among at least one-third of the competitors. There will also be gold, silver, and bronze medals for the highest three men in each match.

Position prone. Spotting shots by telescope. Only ordinary padding allowed the shooter. Entrance fee for each match \$3.00. Targets 25 cents each. Nightly range fee 25 cents. Equipment will be registered on making the first entry. The Executive Committee reserves the right to make any changes in rules or conditions deemed necessary.

Championship. On Saturday, March 8th, 1924, the Third Annual Metropolitan Championship will be held, consisting of 50 consecutive shots, 100 yards, prone. Prizes: Cash as per Match A; gold, silver, and bronze medals to the three highest men; and the annual medal for one year. Entrance \$3.00, range fee 25 cents.

Won in 1922 by E. B. Rice, score 493; in 1923 by L. J. Cora, score 494.

Re-entry. A re-entry match on the four-tenths inch ring target will be held every night. Cash prizes for same paid out the following Saturday.

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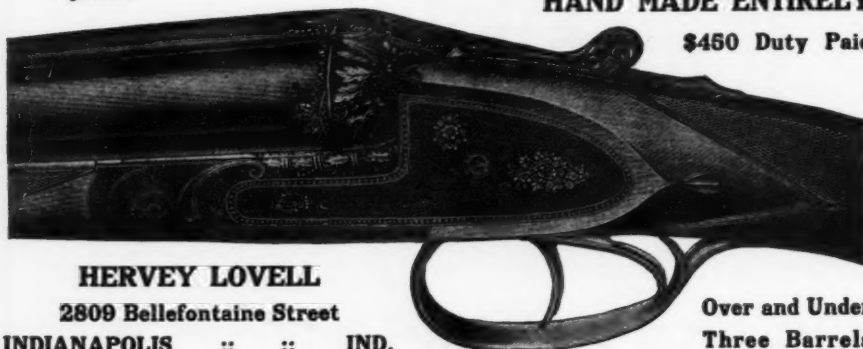
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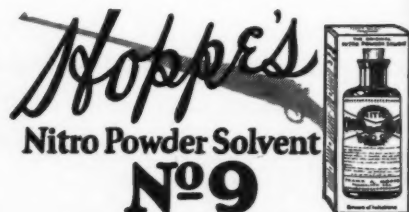
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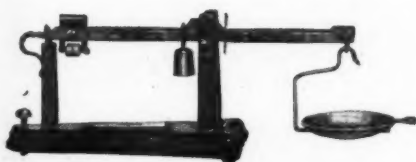
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WANTED—A flintlock Kentucky rifle, in condition for shooting. Must be good. Give full description and condition, together with price. T. G. Samworth, THE AMERICAN RIFLEMAN.

WANTED—Good examples of early Kentucky flintlock rifles and carved powder horns. Send description (photograph, if possible) and price. J. G. Dillin, 102 West Front Street, Media, Pa.

WANTED—a double barrel flintlock shotgun, in good condition. Give complete description, condition, and lowest price. T. G. Samworth, THE AMERICAN RIFLEMAN.

"FIREARMS OF YESTERDAY" are a specialty with "THE OLD GEORGETOWN GUILD." At all times there are on hand a large number of specimens from which to select examples of early American, Confederate States and European firearms. Tell us what your collection needs. We will probably be able to help you. The Old Georgetown Guild, 2722 M Street, N. W., Washington, D. C.

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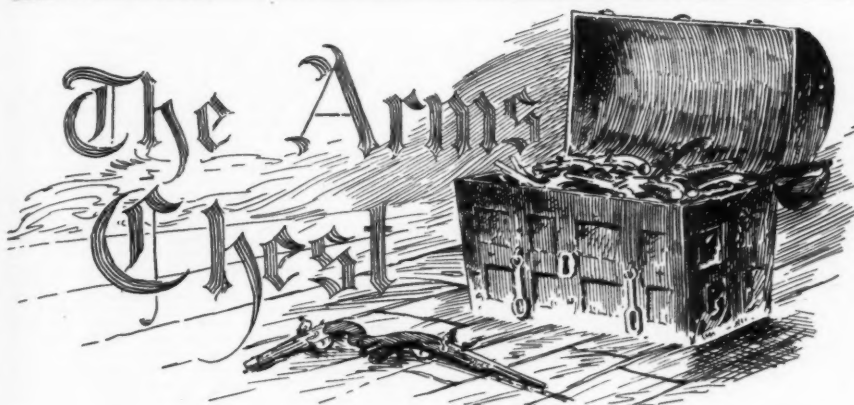
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FOR SALE OR TRADE—Two Model 1912, 12-ga. 28- and 30-inch Winchester pump guns, never fired, \$45.00 each. One new, one almost new, .250 bolt action Savage rifles, \$40.00 and \$39.00. One Model 1897 12-ga. 30-inch Winchester take down, new, never fired, pump gun, \$39.00. One Remington 12-ga., 30-inch, new, never fired, pump gun, model 10, \$44.50. One .22 Colt Automatic, very good condition, inside perfect with gold bead and Heiser scabbard, \$22.50. One .38 Colt Officers' Model 7½, new, \$33.00. One Victory grade, 12-ga. 34 inch Ithaca single trap, silvers pad, new, \$45.00. One 16 size 23 jewel Vanguard Waltham 25-year case perfect, \$50.00. One 30-inch Hart-Andrews 30-06 cal., 1½ x ¾ barrel and receiver, tapped for 48 sight, military front sight, barrel, new condition, not blued, \$35.00. One No. 47 Stevens beaver tail forearm, scope blocks, .22 cal., perfect inside, no stock, regulation globe and peep sights, \$20.00. Two A-5 Winchester scopes, \$24.00 each, with No. 2 mounts. One Winchester 52 superaccurate \$30.00. Will send C. O. D. subject to examination all above guns. **WANT**—Heavy barrel and receiver, or complete heavy rifle, 24-, 26-, or 28-inch barrel, not under ¾ at muzzle. Must be new and perfect inside, 30-06 caliber. **WANT**—22 Springfield, new, never fired, Model 1922. Must be sent subject to approval. Jim Wade, Box 493, Sheridan, Wyoming.

FOR SALE—One .38 Special Smith & Wesson Military and Police Square Butt Revolver. Patridge sight. New, never been shot, with officer Sam Brown belt and high-grade right-hand leather swivel holster, with flap and leg strap. Also one set Ideal No. 3 Special reloading tool with separate Ideal bullet mould No. 353311. All the above brand new and never been used. An outfit any gun crank can be proud to own and the price is \$40.00 for a quick sale. Theodore Farnsworth, 118 E. 2nd St., East Liverpool, Ohio.

FOR SALE—Colt .22 automatic, \$22.50. S. & W. square butt .38 special, \$25.00. Colt .45 single action 7½ inch \$15.00. Krag \$9.00. Ithaca Double 4 E. Silvers pad and Lyman Ivory sights, open and full, \$100.00. All fine condition, first Money Order or check gets them. Dr. Miller Wells, Chester, W. Va.

FOR SALE—Cheap. Winchester Model 1912 shotgun, 20-gauge, brand new. Remington rifle, Model 14-A, .35 caliber, grip checkered and sling swivels attached, brand new. Make cash offer for either or both. **WANTED**—Reloading tools for 7 m. m. Mauser, also male black and tan rat terriers about 5 months old. Stamp for reply. P. R. Westover, Frugality, Cambria Co., Penna.

FOR SALE—New Sporting Rear Peep Sight for Savage 1919 N. R. A. 1-16 or 3-32 aperture. Each, \$1.00 postpaid. Tested and approved by Savage Arms Corporation. Aperture over cocking piece and close to eye. Will not fit Sporter unless you have N. R. A. sight base. C. E. Z. Sight Company, 69 E. Welch Ave., Columbus, Ohio.

RIFLE RESTOCKING AND REBLUING—We rebuild your military rifle in a sporting model and make it shoot as straight as your barrel is good. All rifles given target and working tests before shipment. W. R. McCay & Sons, 639 Morton St., New Castle, Pa.

FOR SALE—Kodaks, Graflex cameras, lenses, binoculars at lowest prices, new and slightly used. We take your camera or high-grade firearms in trade. National Camera Exchange, 7th and Marquette Sts., Minneapolis, Minnesota.

FOR SALE—50 cal. Remington pistol, Army model, smooth bored for shot, in good condition, with 40 rounds of shot cartridges, non-reloadable type, \$15.00. .50 cal. Remington pistol, Navy model, in good condition, with 60 rounds of reloadable ball cartridges, \$16.00. Ideal 8-ball mould, .30 cal., No. 308274-195 grains, good condition, \$7.00. Ideal 8-ball mould, .30 cal., No. 308333 gas check bullet, good condition, \$7. Ideal Handbook No. 16, 1904 edition, \$1.00. Ideal .310 bullet sizing and lubricating die, \$1.25. Experimental model Savage Automatic pistol, cal. .45, good condition, \$26.00. Ideal 'Straightline' loading machine, for bench work, with full set of Krag equipment, weight about 25 pounds; good condition, \$18.00. Resizing dies, any quantity, cal. .45-70, .45 Colt, full length, .30 Krag, neck resizing only. Also a few dies for the .45 auto, \$1.50 each. Collection of about 70 ancient and modern cartridges, \$3.50. B. K. Wingate, 448 Birkle Ave., Bethlehem, Penna.

FOR SALE—Winchester Model 1912 Shotgun, 12 ga., \$32.00. Colt's New Service .45 Model 1909, 5¼ inch, like new, \$22.00. Nahant Sporter and 300 cartridges, new, \$15.00. Marlin Slide Action 32-20, \$15.00. Savage .22 Model 1919, remodeled, \$13.00. Remington Carbine .50-70 shells and tool, \$7.00. S. & W. Target Revolver 32-44 cal., good condition. Sharps .22 four barrel pistol. One .30 rimfire pistol. One .38 Special Auxiliary barrel, and one .32-40, both 12 gauge. Oluf Bearrood, R. No. 2, Luck, Wisconsin.

FOR SALE—256 Newton, one of the last built by C. Newton, perfect, shot twenty times, stock refinished in oil, straight line reloading tool by Kosholek, and 30 140-grain bullets, \$50.00. .38 S. & W. special, target, pearl grips, 142 cartridges, inside perfect, outside excellent, \$30.00. .25 Colt nickel, Colt pearl grips, revolver perfect, 78 cartridges, \$20.00. R. H. Lanferman, 7063 Greenview Ave., Chicago, Ill.

FOR SALE—THE AMERICAN RIFLEMAN magazine for 1922 and 1923 at 25 cents per copy. **WANT**—June 15, 1921, August 1, 1921, October 1, 1921, November 1, 1921, "Arms and the Man." Also back copies before year 1921, single or bound copies. Wm. F. Smith, 5619 No. 4th St., Philadelphia, Pa.

FOR SALE—Winchester .38-56 single shot solid frame target rifle, Number 3, 30 inch octagon barrel, fitted with 5-A Winchester scope and loading tools. All in fine condition, for \$35.00. No trades. Will ship C. O. D. on receipt of guarantee of \$5.00. D. H. Feltner, Clarksburg, West Virginia.

FOR SALE—One Springfield .22 cal., new, hand finished stock, \$35.00. One Stevens 414, perfect inside, \$10.00. Stevens set trigger, weight 10 lbs., barrel slightly worn but spotless inside, \$25.00. D. H. McCarrier, 201 Cottage Hill Ave., Butler, Pa.

WANTED—Ideal reloader for .45 Colt Model 1909, or parts for Bond. Also .30 caliber gas check mold and cups or Yankee tool for same. Ed. Foster, R. 1, Gowanda, N. Y.

WANTED—Bullet mold and Bond tool parts for .45 Colt cartridge. Condition must be good and price right. Laurence J. Hathaway, 219 W. Madison Street, Baltimore, Md.

WANTED—Gunsmith. State age, wages and experience. F. Surkamer, 54 W. Lake St., Chicago, Ill.

FOR SALE—One 1903 Springfield as issued \$25.00. One 8 m.m. Mauser Sporter \$15.00. One .303 Ross converted Sporter \$10.00. One Model 52 Winchester with Stevens 468 Scope, almost new, \$50.00. One 12 gauge double hammerless imported shotgun (sample gun) 6 lbs. 4 oz., 30 inch barrels, new, \$100.00. One 12 ga. over and under shotgun, 30 inch barrels, straight grip, oil finish stock. Both barrels full choke, double Lyman sights, double trigger. Fine trap or field gun. Engraving fine. Price \$550.00. Guaranteed for one year. I can order to your measurements an over and under shotgun for field or trap. One year guarantee with each gun. Wm. F. Smith, 5619 N. 4th St., Philadelphia, Penna.

FOR SALE—S. & W. Revolver, Model 1917, new, regulation leather holster, 200 cartridges, \$25.00. O. M. Colt, 7½ inch perfect; Patridge Sights, also bead sights, leather cartridge belt and holster, 3 pound trigger pull. Very fine action, \$30.00. Ideal bullet mould No. 350302, Melting Pot Ladle, Reloading Tool No. 3 with double adjustable chamber, complete with muzzle resizer, cap extractor, charge cups for muzzle and smokeless powder, 2 pounds du Pont No. 3 pistol powder, about 30 pounds of lead, several sticks of solder. Ideal Handbook. Best offer takes lot. F. W. Strickler, 155 W. Wood St., Youngstown, Ohio.

FOR SALE—Savage N. R. A. 1919 .22 caliber equipped with Winchester A-5 Scope, No. 2 mounts. Guaranteed to be in new and perfect condition. Price \$37.50. Or could use Remington 12 Automatic, Remington Model 24 .22 Automatic, Bisley Colt or good target handgun. No junk wanted and boot where it belongs. N. A. Ormsby, Chillicothe, Missouri.

FOR SALE—One 1886 Model .38-56 Winchester \$20.00. One .22 cal. Long Rifle Stevens Off-Hand Model Pistol, 8 inch barrel, \$12.00. .32 cal. Colt's Automatic Pistol \$15.00. 12 gauge Single Barrel Iver Johnson, full choke, \$8.00. Wm. Mathews, 327 Broadway, Scottsdale, Pa.

FOR SALE—S. A. Colt .45, 7½-inch barrel, perfect condition, holster, cartridge belt, Ideal No. 3 tool, attachments, dies for Sizer Mould 454190, \$27.50. Knob scope mount, with blocks, \$4.75. Chas. Wale, 604 Camp Street, Louisville, Kentucky.

FOR SALE—\$16.00 takes Webley .455 Revolver, excellent inside and out, about 200 cartridges, belt and holster. Good big arm. Want .22 Target Rifle, 8 lbs., in good condition. C. H. Reed, Box 400, Houtzdale, Pa.

TRADE—Ross .303 altered to sporter, barrel perfect, auxiliary cartridge for .32 S. & W. **WANT**—Colt S. A. 5¼ inch barrel or longer, .38, .44, or .45 caliber. Ernest Baldwin, R. F. D., No. 1, Trenton, N. J.

FOR EXCHANGE—44 S. & W. Special Military 6½ inch barrel, nearly new, bluing slightly worn, otherwise perfect. **WANT**—44 S. A. Colt, same condition, 5¼ bbl. or \$27.50. Box 33, Eloy, Arizona.

WANTED—Rifles, pistols, revolvers and shotguns. All kinds and makes. What have you? Prices must be cheap. A. W. Baker, 450 Colvin Parkway, Buffalo, N. Y.

WANTED—High-grade foreign guns. Guns with barrels bursted. State condition and price. F. Surkamer, 54 W. Lake St., Chicago, Ill.

FOR SALE—44 Colt-Remington cap and ball revolvers, fine, \$7.00. New Starr .44 D. A. handsome gun, \$9.00. Spencer Carbine, good, \$5.00. Italian 10.4 m.m., Military rifle, new, \$6.00; used \$3.50, with empties. Ideal 45-70 loading set and mould, \$4.00. .30 Winchester s. r. mould, also 6-m.m. size, \$1.25. Rifles: .30 U. S. 1917, like new, \$17.00. .303 B. S. A. Enfield, new inside, \$15.00. Good .303 Ross, Krag, or new 7.62 Russian, \$9.00. 45-70 Remington-Lee, 100 rounds smokeless, \$11.00. Ross Mark III "Sniper", heavy 31-inch bbl., receiver sight, improved breech, clip loader, \$10.00. .250 Savage, fine barrel, \$25.00. Winchester .22 l. r. Musket, fine, \$10.00. Colt .45 auto, match barrel, good pull, \$20.00. 1909 Colt .45, fine, 5 1/4-inch, \$10.00. Ammunition per 100: .30-06, \$3.25; .30-40 and .303, \$2.25; 7.62, \$2.00; .45 Colt Auto., \$2.25; .38 L. for Colt and S & W Specials, \$1.40. Ordered with guns or in 500 lots, 10 per cent off. 30 per cent off on 1,000. O'Grady, Sisseton, South Dakota.

WANTED—Colt's Officer's Model Target, 7 1/4-inch barrel, caliber .38; New Service Target, 7 1/4-inch barrel, caliber .45; Reising Automatic, caliber .22; with or without holsters. These guns must be new or nearly so. Money order will be mailed immediately upon receipt of most reasonable offer. **FOR SALE**—Powerful rifle range spotting telescope, 33 to 35 power, 5-draw with 2 1/4-inch objective (front) lens. Perfect condition except slight tear in leather covering at one spot. First Money Order for \$30.00 gets it. Might consider even trade for Colt O. M. Target .38 mentioned above, if like new. Dr. Charles Brodsky, 117-01 Metropolis Ave., Richmond Hill, N. Y.

REAL BARGAINS—A \$50.00 Zeiss Zielvier rifle scope, condition perfect, except some small dents in tube caused by mount screws, \$20.00. Remodeled 17 Springfield Sporter, very good condition, equipped with full choked pistol grip stock, checked steel butt plate and grip cap, windgauge peep sight on bridge, \$30.00. Will ship C. O. D. subject to examination. A. J. Koshollek, Stevens Point, Wisconsin.

FOR SALE OR TRADE—Adolph Mauser, cal. .400. Whelen. Takedown equipped with 4X Gerard scope. A beautifully balanced arm. New, never fired. Cost \$350.00. Make offer. Three barrel gun 12-26 .30-30 rifle, a fine gun; set trigger for rifle, trap in stock for four cartridges, changing slide on top. Greener safe, value \$250.00. Sell \$150.00. B. C. Wheaton, 108 Victory Ave., Schenectady, N. Y.

FOR SALE—No trade. Highly engraved Ballard target rifle, cal. .38-56, sole leather case, 600 bullets, 350 nickel plated special made shells and loading tools, \$35.00. L. C. Smith heavy 20-gauge, 28-inch barrels. Jostam pad, cleaning case, outfit is new and perfect. Cost \$54.75—take \$38.00. R. C. Atkins, 4535 Lincoln, Ave., Detroit, Mich.

FOR SALE—Ballard-Winchester 32-40. 27-inch barrel. No. 3, in fair condition. Plain action in good condition, no engraving. Fine fancy walnut stock and forearm, checked, cheek-piece and Swiss butt plate. Vernier peep and windgauge globe front. Bullet mould and Ideal tool. \$26.00 Money Order. Leslie L. Porter, Cummington, Mass.

FOR SALE—S. & W. .38 Special M. & P. Model, round grip, 6 1/2-inch barrel, perfect inside, holster worn outside. Very accurate. Special walnut extension grips, \$20.00. S. & W. own make bullet moulds, .38 S. & W. Special double cavity; conical 158-grain and round ball. Perfect, \$4.00. Gordon Z. Smith, 333 Allyndale Drive, Stratford, Conn.

FOR SALE—Brand new .22-cal. B. S. A. rifle complete, \$43.00. Winchester musket chambered for .22 L. R. cartridge, blocked for scope, Winchester adjustable target sights, excellent condition, \$15.00. Stevens single shot No. 10 target pistol, Good condition, \$10.00. R. H. McGarity, 1332 Quincy St., N. W., Wash., D. C.

FOR SALE—New .45 S. A. Army Colt, 4 1/4-inch barrel, wood grips, \$29.00. New Colt .22 Police Positive Target, \$23.00. **WANT**—New Service Colt .44 S & W Special, Scott Ellett, 816 So. Pasfield St., Springfield, Illinois.

FOR SALE—Best offer gets Model 95 Winchester .30 '06 in fine condition with Marble duplex front, Lyman receiver rear and 1,000 full patch 150 grain cartridges, or sell separate. L. R. Wyckoff, Manassquan, N. J.

TRADE—38 Colt Military Auto., 6 inches, perfect, for .38 Colt Officer's Model 7 1/4. .38 Colt Army Special, new for .38 Officer's Model, 6-inch, perfect. Will give difference on latter. B. J. Wallace, Clymer, N. Y.

FOR SALE—Star-gauged Springfield with re-finished full-length Model 1922 stock, checkered pistol grip and forearm; equipped with regulation leather sling, Lyman No. 48 receiver sight and ivory bead front sight. This gun has been carefully kept and is in excellent condition inside and out. Cost over \$75.00—will take \$55.00. Winchester .405 solid frame with shotgun butt stock, Lyman receiver sight and ivory bead front sight. Barrel in good condition and accurate. Bluing worn where gun is gripped around magazine, \$35.00. Mannlicher-Schoenauer 6.5 mm., 18-inch barrel carbine. This gun was imported direct and is in new condition, \$35.00. .25-cal. Colt Automatic pistol. Barrel in good condition. Wear on bluing scarcely noticeable, \$12.00. .22-cal. Fiala magazine target pistol, inside good, outside fair condition, \$7.50. No trades. First draft or certified check takes them, as these guns are priced on prompt action. **WILL BUY**—If price is right, .375 Holland and Holland Magnum Mauser in good condition. J. V. Murray, 6422 Drexel Ave., Chicago, Illinois.

WANTED—Hard woods for cabinet work. Winchester S. S., 32-40 in A-1 condition. Give all particulars in first letter. Send offers for AUTO-GRAPHLEX 3 1/4 x 4 1/4, 4 x 5 IC Tessar lens, every possible accessory. All in A-1 condition, 50 per cent of the extras are new. Also a B & J De Luxe 3 1/4 x 5 1/4 with a GORZ 6 1/2 DAGOR lens. Same comments as above. Will reply to all inquiries but don't waste my time with yours. Dr. Alex M. Cheney, Jerseyville, Ill.

FOR SALE—About 80 copies of *The Journal of Accountancy*. Fifteen high-grade works on General Accounting, Cost Accounting, Auditing and CPA examinations, all by leading American accountants. Works published by the Ronald Press Company, and list from four to six dollars per vol. Take 50 per cent list. Write for information. **WANT**—National Match Springfield, .22 Automatic, .45 Automatic—commercial make. T. C. Barrier, Box 52, Statesville, N. Carolina.

EXCHANGE OR SELL—Merwin & Hulbert Pocket Army Revolver, S. A., .44-40 cal., 3 1/4-inch bbl., slightly pitted, otherwise good condition. **EXCHANGE**—for .45 auto. Government Model or .44-40 S. A. Army or Bisley Model Colt with long bbl. and perfect inside. Sell for \$25.00. Fred J. Wentworth, Box 324, Monument Beach, Mass.

FOR SALE—250-3000 Savage, lever-action. Perfect used condition, \$30.00. Will trade for star-gauged Springfield, with No. 48 Lyman sight, or will trade as part payment on Springfield Sporter. Price of sporter must be reasonable. Dr. Thos. J. Pearson, 1st Nat'l Bank Bldg., Roswell, New Mexico.

TRADE—32 Colt Auto., inside perfect; outside only slightly worn; extra magazine—for late commercial made .45 S. A. Colt, 5 1/4-inch barrel, in like condition. A. J. Lester, 328 W. Acacia Ave., Glendale, Calif.

FOR SALE—45-cal. Colt Auto., fine commercial grade and holster, \$25.00. Winchester 12-gauge, 18 1/2" Riot Pump solid frame, factory refinished, \$25.00. A. H. Reupke, 2608 Le Claire St., Davenport, Iowa.

FOR SALE—Warner & Swasey scope, Model 1908, in good condition, \$25.00. Or trade for S & W .22 L. R. single shot 10-inch in new condition. W. H. Riddle, Seaside, Oregon.

WANTED—Colt's or S. & W. .32 cal. pocket revolver. Not over 3 1/2 inch barrel. Must be in good condition and reasonably priced. R. H. O'Brien, Howard St., Framingham, Mass.

SELL OR TRADE—New .35 S & W Automatic Pistol. **WANT**—New 32-20 Smith & Wesson revolver, blued, 5-inch. Make offer. C. Baker, 2100 E. 59th St., Kansas City, Mo.

FOR SALE—Colt S. A. Army .45, 7 1/4 inch barrel. Perfect. \$16. Stevens .22 No. 10, perfect, \$15. Van Wagner, 34 Cedar St., Takoma Park, D. C.

WANTED—A .38-caliber special reloading tool. State make, condition, and price. Paul Bauerle, 2008 East St., North, Lansing, Mich.

WANTED—High-grade guns, 2nd hand, condition no object. State particulars fully. F. Surkamer, 54 W. Lake St., Chicago, Ill.

WANT—April 15, 1922 copy of *Arms and the Man*. State price. Arthur Strodl, 2311 Grant St., Vancouver, Washington.

FOR SALE—One New Savage .250 bolt, Model 1920. Just like it came from factory, 80 cartridges, New Ideal D. A. tool and 85-gr. Ideal gas check mould, \$55.00. One Remington H. P. Slide Action Model 14-A, inside perfect, outside shows some wear from being carried hunting, 100 Remington 117 soft point cartridges, 75 empties, Ideal D. A. tool, Ideal gas check 117-gr. mould, cleaning rod, \$30.00. One .44 S & W Special 2 1/2-inch barrel, plain sights, inside perfect, outside holster worn, with Heiser Holster, \$28.00. One Colt's S. A. Army .38 Sepc. Action, perfect, fitted with 7 1/4-inch New Colt's Officers' Model barrel, fine trigger pull. A fine target arm, Ideal D. A. toll, 158-gr. bullet mould, 200 cartridges, \$25.00. Seven boxes (140) .308 caliber Savage ammunition, 150-gra. Spitzer soft point, in factory boxes, \$10.00. **TO TRADE**—A Stevens D. A. Hammer Shotgun, 30-inch, Mod. Choke, perfect condition. Recall pad for a .45 S. A. Army Colt's Revolver, 4 1/2-inch barrel, outside finish no object, inside must be perfect. **WANTED**—A prewar .44 S & W Special with encased ejector rod, 6 1/4-inch barrel, blued finish with plain or target sights. None others need apply. Harry Davison, Box 76, New Franklin, Missouri.

FOR SALE—Winchester 30-30 Carbine, in A-1 condition, stock and forearm refinished, like new, barrel guaranteed. Has a Marble's Flexible Rear Sight and Ivory Bead Front Sight, complete with leather-bound canvas sling case, \$25.00. One Semi-Sporting Pistol Grip Stock for Krag Rifle 86, Mod., completely finished. Bargain at \$5.00. One Lyman No. 34 Receiver Sight for Krag Rifle, \$4.50. 500 U. M. C. No. 33 Shotgun Shell Primers, \$1.50 the lot. One 3 1/4 x 4 1/4 Eastman Brownie Camera, complete with leather carrying case, \$8.00. A. V. Gearhart, 221 Dixon St., Stevens Point, Wisconsin.

FOR SALE OR TRADE—Parker single trap, fine condition, \$100.00. Smith double, 16-gauge, cost around \$30.00—will sell for \$45.00. One prewar Luger .30 for \$25.00. One S & W Single Action Target Pistol, 10-inch barrel \$20.00. One 32-40 fancy Schuetzen Winchester, double set triggers, hand rest like new, \$50.00. One Krag Carbine with 500 rounds ammunition, \$20.00. One S & W .38 Special Target Sights, 6 1/2-inch barrel, \$25.00. All above guns are in fine condition. L. R. Dessaint, Box 104, Davenport, Iowa.

FOR SALE—Marlin 30-30 half octagon, 24-inch barrel, half magazine, take down extra fancy stock, checkered pistol grip and forearm, Marble sights. Very fine condition, \$30.00. Fiala 3 barrel combination .22, never shot, \$15. Game Getter, new model, 12-inch, never shot, \$17.00. Remington 12-A Marble sight, good condition, \$12.00. Russel Benedict, Hudson, N. Y.

FOR SALE—Smith & Wesson 22 x 32, brand new, \$25.00. Remington No. 14-A, .32-cal., 22-inch barrel, take down; rust rope cleaning rod, good case and 20 S. P. cartridges, like new, \$30.00. U. S. Model 1917, .30-06 new, original stock, remodeled to semi-sporter swivels, retinal on it, pistol grip, \$22.50. J. R. Ziegler, Webster City, Iowa.

FOR SALE—Star-gauged Sporting Springfield, Mann Niedner Scope mounts, Lyman 48 rear and ivory bead, front sights. Pistol grip stock with cheek piece. Gun crank condition. Price, \$30. or exchange. **WANTED**—One .22 Springfield Henry Brace, 11034-86th Ave., Edmonton, Alberta, Canada.

SPRINGFIELD AND KRAG REMODELING—At prices that you can afford. Also special revolver and automatic pistol stocks made. Hand-loaded .30 '06 and Krag ammunition. Theodore M. Carlson 329 Jackson Ave., Warren, Pennsylvania.

FOR SALE—Winchester Model 52, fine condition, restocked 13 1/2 x 1 1/4 x 3, full pistol grip checkered. The stock is a professional job, and the rifle is fitted with a Winchester A-5 scope with No. 2 rear mount. Price, \$55.00 for outfit. Thos. Sheilhamer, Loyal, Wisconsin.

FOR SALE—22 Colt Automatic in factory box, Heiser Mexican Carved Holster and Belt, Ivory and Gold Bead, \$32.00. Savage 1914 .22, factory box, Marble Tang Target Disc, \$20.00; Winchester L. R. Musket, fine, \$24.00. Sherman Church, 9 Brush St., Norwalk, Conn.

FOR SALE—L. C. Smith 12-28, brand new, only six shots fired in it, \$35.00. Watson front sight for Springfield. Cost \$12.00—for \$5.00. 1922 Springfield .22, \$30.00. L. A. Carlson, 440 Winsor St., Jamestown, N. Y.

FOR SALE—One new genuine, best make, short action Mauser, single trigger, chambered for .300 Savage, Niedner work, very accurate. Price \$40.00. J. F. Bernard, 116 Liberty St., San Francisco, Cal.

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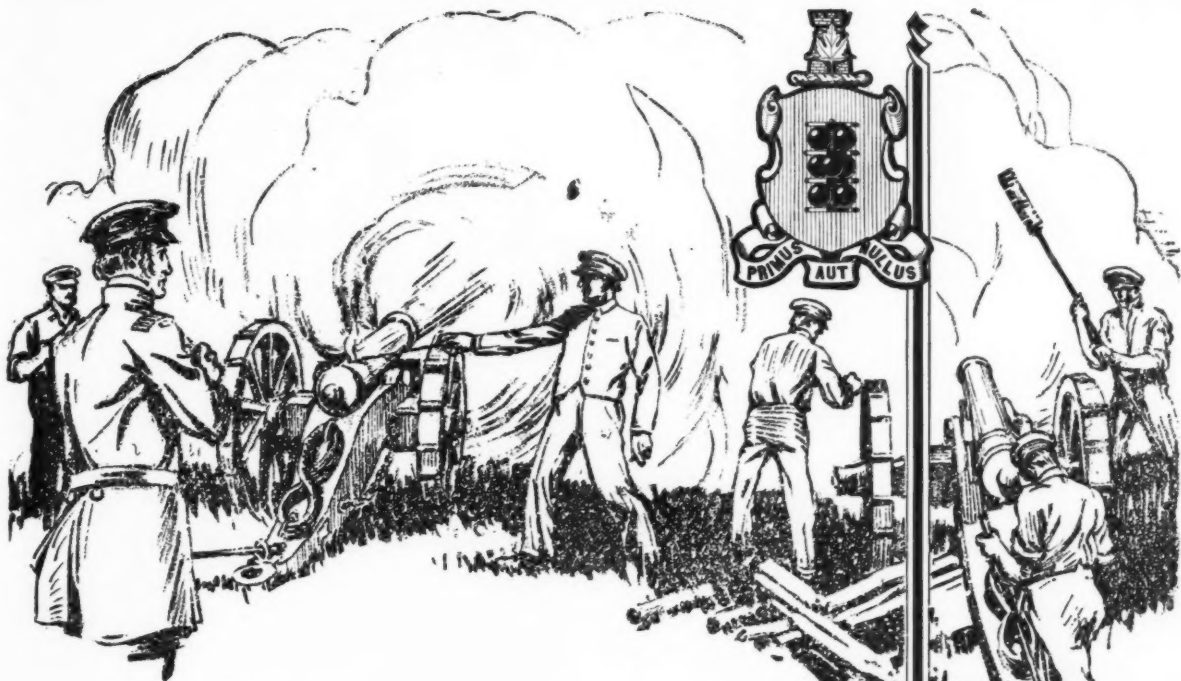
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